

3.0 AFFECTED ENVIRONMENT

This chapter provides a general description of the natural environment and the existing social and economic characteristics of the study area. The descriptions establish a baseline condition of the social and environmental settings of the study area and provide a basis for determining the environmental consequences of the design alternative, which are discussed in **Chapter 4** of this report.

3.1 STUDY AREA

The study area for the Tupelo Railroad Relocation Project is located in northeastern Mississippi. The study area, shown on **Figure 3-1**, includes the southeastern portion of Union County, the eastern portion of Pontotoc County, and all of Lee County. The incorporated towns and cities located within these counties include the following (U.S. Census Bureau 2006 estimated population in parentheses):

Union County

- Blue Springs (154)

Pontotoc County

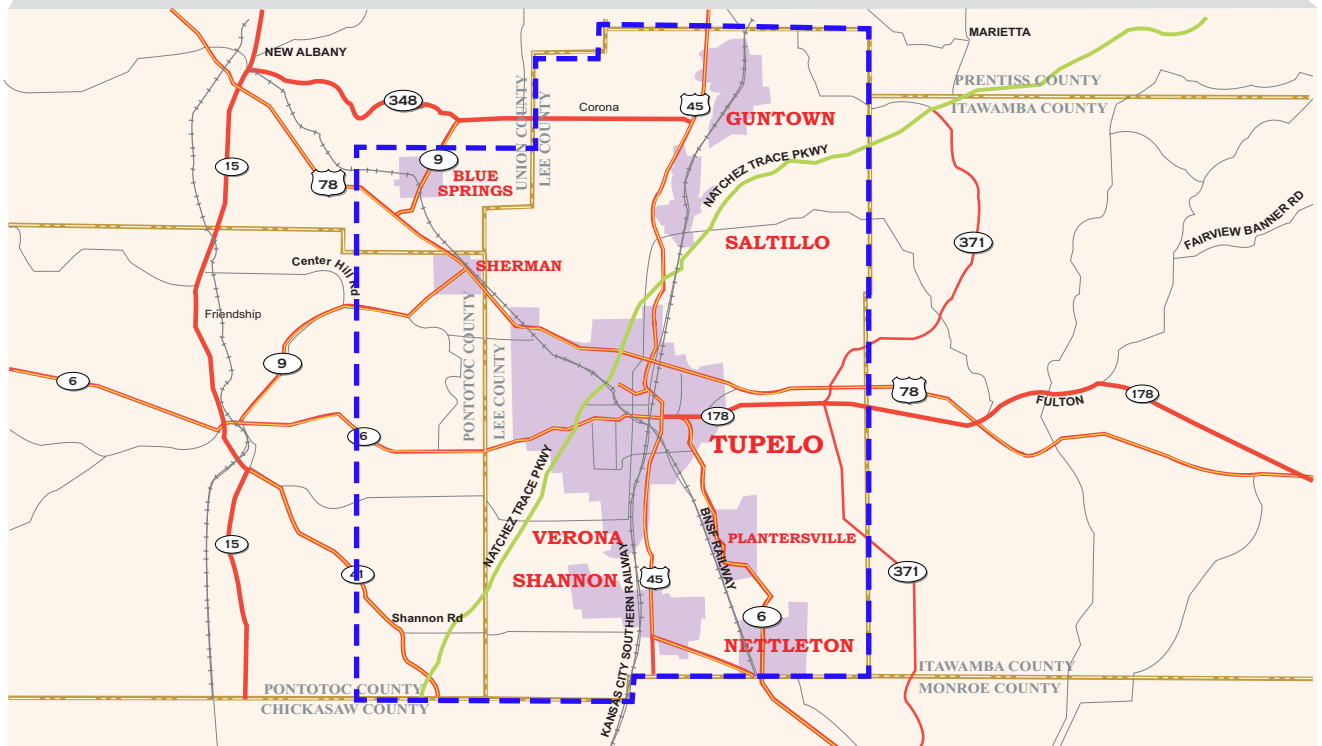
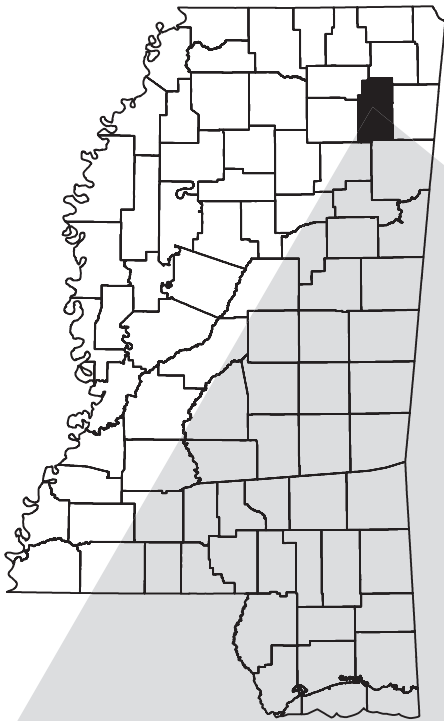
- Sherman (619)

Lee County

- Guntown (1,399)
- Nettleton (2,017)
- Plantersville (1,328)
- Saltillo (3,944)
- Shannon (1,726)
- Tupelo (35,930)
- Verona (3,390)

The City of Tupelo is also the county seat of Lee County and the largest city within the study area. In addition to the incorporated towns and cities, the study area also includes the unincorporated areas of Endville, Belden, and Mooreville.

During the alternatives analysis, the affected environment of the study area was reduced as bypass corridors were excluded from consideration. With the removal of Alternatives B and K from consideration, the study area in Union and Pontotoc Counties and the area to the south and west of the limits of the City of Tupelo were removed from the affected environment, including the incorporated cities of Blue Springs, Nettleton, Shannon, Sherman, and Verona, and the unincorporated area of Endville. With the removal of Alternatives C, D, E, F, G, H, I, J, and L from consideration, the study area to the north and east of the limits of the City of Tupelo were removed from the affected environment, including the incorporated cities of Guntown, Plantersville, and Saltillo, and the unincorporated areas of Belden and Mooreville.



LEGEND

- Primary Road
- Secondary Road
- Road
- Rail
- National Parkway
- US Highway
- State Highway
- County Boundary
- Study Area

Tupelo Mississippi Railroad Relocation Planning & Environmental Study

Study Area

Figure 3-1

With only one Build Alternative considered for evaluation, the affected environment was then further reduced to the area adjacent to the proposed improvements. Since the improvements would be entirely within the limits of the City of Tupelo, the city limits became a logical demarcation for the affected environment. The City of Tupelo has also planned to annex some properties adjacent to the existing city limits. Therefore, the affected environment, as discussed in this chapter, is considered the portion of the study area defined as the city limits of the City of Tupelo and the proposed annexation area, shown on **Figure 3-2**.

3.2 LAND USE

3.2.1 Existing Land Use

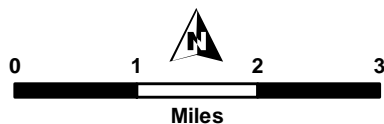
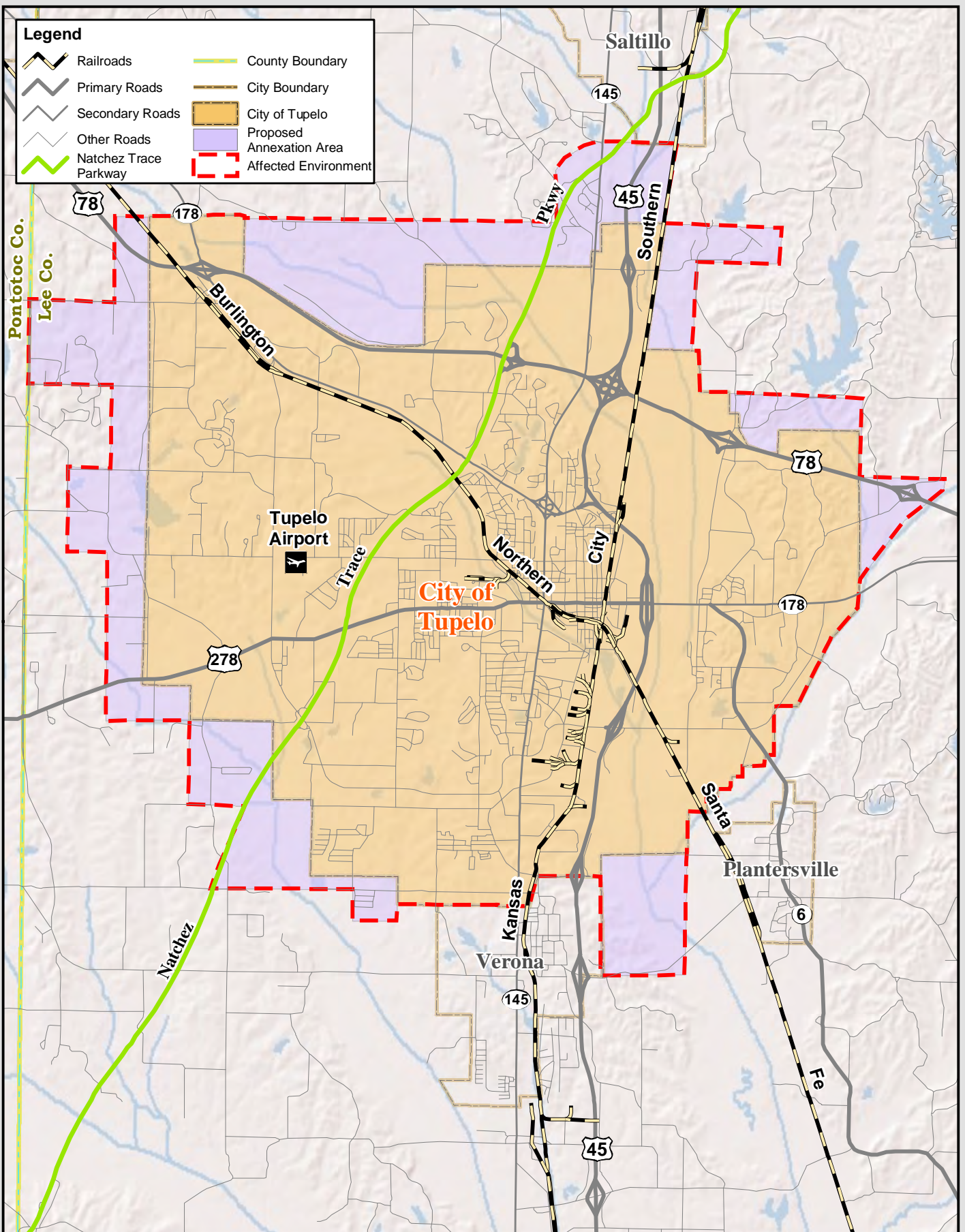
In general, most of the land in the affected environment is rural. The majority of land use in the City of Tupelo is designated as either agricultural, residential, or rights-of-way for transportation corridors such as streets, highways, rail corridors and the Natchez Trace Parkway, shown in **Table 3-1** and on **Figure 3-3**. The Natchez Trace Parkway has a minimum 1,000-foot wide buffer along its corridor for viewshed protection.

Table 3-1 Existing Land Use within the City of Tupelo

Land Use by Parcel	Area (acres)	% of City
Agricultural	9,560	26.07%
Commercial Retail-Wholesale	1,077	2.94%
Commercial Services-Office	1,172	3.20%
Industrial-Heavy	588	1.60%
Industrial-Light	351	0.96%
Medical	106	0.29%
Public Government	9	0.02%
Residential 1-2 Family	8,433	23.00%
Residential Mobile Home	67	0.18%
Residential Multi-Family	260	0.71%
Semipublic	756	2.06%
Transportation-Utilities-Communication	110	0.30%
Vacant Suitable for Development	5,557	15.16%
Unknown	462	1.26%
Transportation R/W (Streets, Highways, Railways, and Natchez Trace)	8,158	22.25%
Total	36,666	100%

Sources: Mississippi Automated Resource Information System (MARIS),
City of Tupelo Planning and Development Department

- Legend**
- Railroads
 - Primary Roads
 - Secondary Roads
 - Other Roads
 - Natchez Trace Parkway
 - County Boundary
 - City Boundary
 - City of Tupelo
 - Proposed Annexation Area
 - Affected Environment



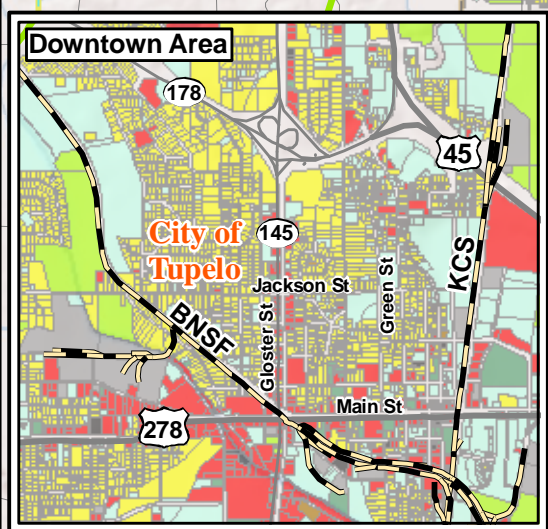
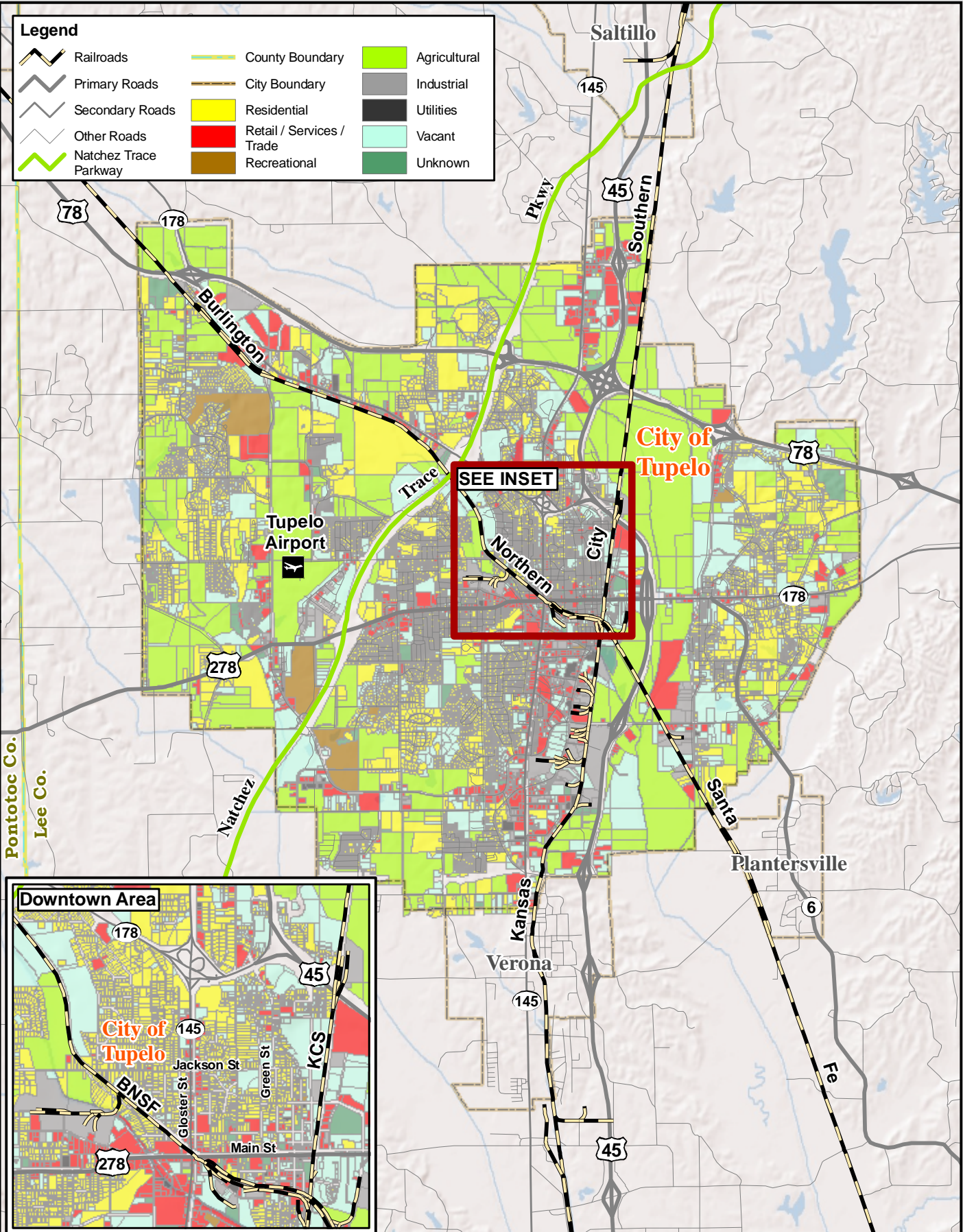
Tupelo Mississippi Railroad Relocation Planning & Environmental Study

Affected
Environment

Figure
3-2

Legend

Railroads	County Boundary	Agricultural
Primary Roads	City Boundary	Industrial
Secondary Roads	Residential	Utilities
Other Roads	Retail / Services / Trade	Vacant
Natchez Trace Parkway	Recreational	Unknown





3.2.2 Proposed Land Use

3.2.2.1 Zoning

The City of Tupelo has established zoning districts to help guide and direct development within the City and to ensure that growth is in character with the comprehensive plan of the City. The main land uses of the City are zoned for agriculture, residential, and transportation; however, the primary zoned districts are agriculture, and commercial, industrial and large and medium lot residential, shown in **Table 3-2** and on **Figure 3-4**. Tupelo is accommodating greater commercial and industrial growth within city limits and ensuring that growth is in line with the desires of residents living within the city limits.

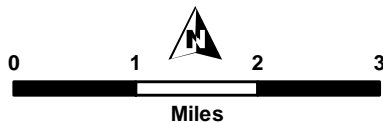
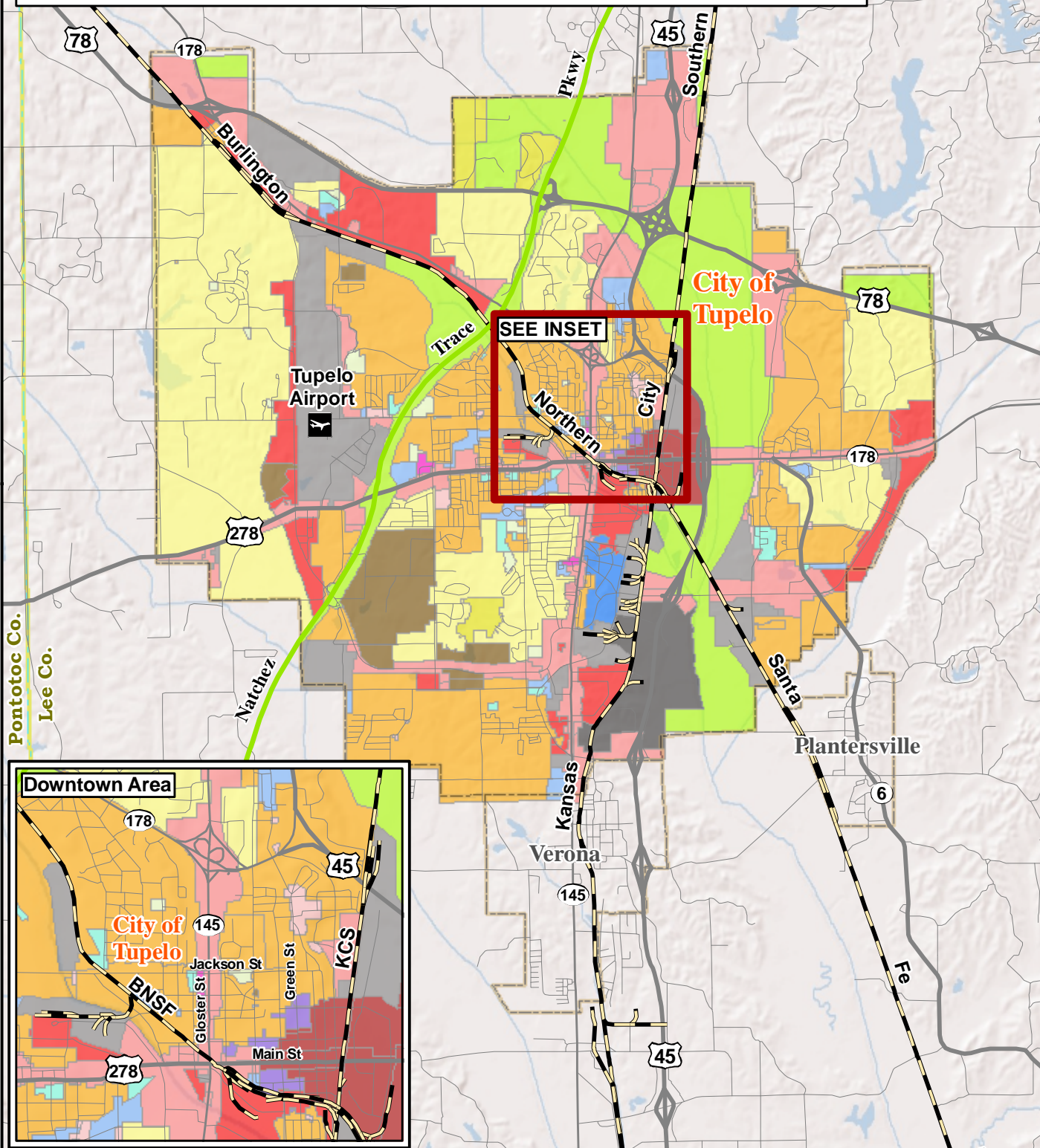
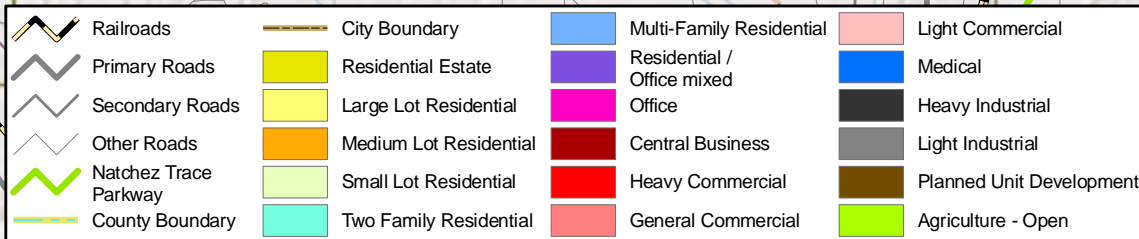
Table 3-2 Zoning within the City of Tupelo

Zoning District	Zoning Abbreviation	Area (acres)	% of City
Agricultural-Open District	A-O	5,335	14.55%
Light Commercial District	C-1	112	0.31%
General Commercial District	C-2	6,920	18.87%
Heavy Commercial District	C-3	1,989	5.42%
Central Business District	CBD	439	1.20%
Light Industrial District	I-1	2,721	7.42%
Heavy Industrial District	I-2	798	2.18%
Office District	O	33	0.09%
Planned Unit Development	PUD	1,799	4.91%
Medical District	M-1	206	0.56%
Residential Estate District	R1-E	425	1.16%
Large Lot Residential District	R1-L	8,014	21.86%
Medium Lot Residential District	R1-M	7,031	19.18%
Small Lot Residential District	R1-S	136	0.37%
Two Family Residential District	R-2	185	0.51%
Multi-Family Residential District	R-3	480	1.31%
Residential/Office Mixed District	R-O	45	0.12%
Total		36,667	100%

Sources: Mississippi Automated Resource Information System (MARIS),
City of Tupelo Planning and Development Department

Tupelo has 17 zoning districts. They are defined as follows:

- **Agricultural-Open District (A-O)** - The purpose of this district is to protect agriculture and open space uses until urbanization is warranted. This zoning use makes room for eventual development or protects areas located in floodplains from development.
- **Light Commercial District (C-1)** - The purpose of this district is to provide retail and personal services for people in nearby residential neighborhoods. Strict guidelines are in place to protect adjacent neighborhoods.



Tupelo Mississippi Railroad Relocation Planning & Environmental Study

Zoning

Figure
3-4



- **General Commercial District (C-2)** - These districts are primarily located along major thoroughfares. They are to provide appropriate appearance, ample parking, controlled traffic, and suitable landscaping.
- **Heavy Commercial District (C-3)** - The purpose of this district is to provide an area for intensive, high impact commercial and small scale industrial establishments. Residential areas and retail office space are not considered compatible.
- **Central Business District (CBD)** - This district is designed to permit a concentrated development of facilities in downtown Tupelo while maintaining the character of downtown Tupelo.
- **Light Industrial District (I-1)** - The purpose of this district is to provide an area for industries which can operate in a relatively clean and quiet manner and would not be obnoxious to adjacent residential or business districts.
- **Heavy Industrial District (I-2)** - The purpose of this district is to establish an area for heavy industries which by their nature may create some nuisances.
- **Office District (O)** - The purpose of this district is to provide centralized compatible location for professional and business offices.
- **Planned Unit Development (PUD)** - A PUD is a tract of land under single ownership, or under common control, evidenced by duly recorded contracts or agreements approved by the City Council. A PUD is planned and developed as an integral unit in a single development operation or in a programmed series of development operations in accordance with a master land use plan and detailed engineering and architectural plans as approved by the City Council.
- **Medical (M-1)** - The purpose of this district is to provide a centralized location for major medical and related services and to protect and promote complimentary facilities.
- **Residential Estate District (R-1E)** - The purpose of this district is to accommodate large “estate” sized lots where utility services do not support more dense development.
- **Large Lot Residential District (R-1L)** - The purpose of this district is to preserve the quiet residential nature of single-family dwellings located in this area.
- **Medium Lot Residential District (R-1M)** - The purpose of this district is for single-family dwellings and to encourage the wise use of land and natural resources with the aim of reducing sprawl and costly infrastructure requirements are associated with sprawl.



- **Small Lot Residential District (R-1S)** - The purpose of this district is to support single-family dwellings and the related recreational, religious and educational facilities which provide balanced and attractive residential area.
- **Two Family Residential District (R-2)** - The purpose of this district is to accommodate duplexes or two unit condominiums. These districts also serve as a transition from commercial and multifamily areas to single-family areas.
- **Multi-Family Residential District (R-3)** - The purpose of this district is to support multi-family dwellings, discourage uses which would interfere with the residential nature of these districts, and ensure developments have services, such as open space and recreational facilities to support persons living in the district.
- **Residential/Office Mixed District (R-O)** - The purpose of this district is to allow the conversion of older residential structures to limited office uses in older neighborhoods. The establishment of retail establishments is prohibited as it requires large amounts of short-term parking and high volumes of traffic.

3.2.2.2 Overlay Districts

In addition to zoning districts, the City has also established overlay districts, shown on **Figure 3-5**. These areas adhere to both zoning and overlay regulations to prevent growth that is deemed out of character for the area.

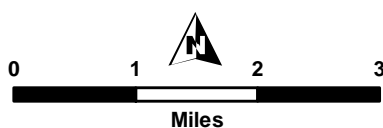
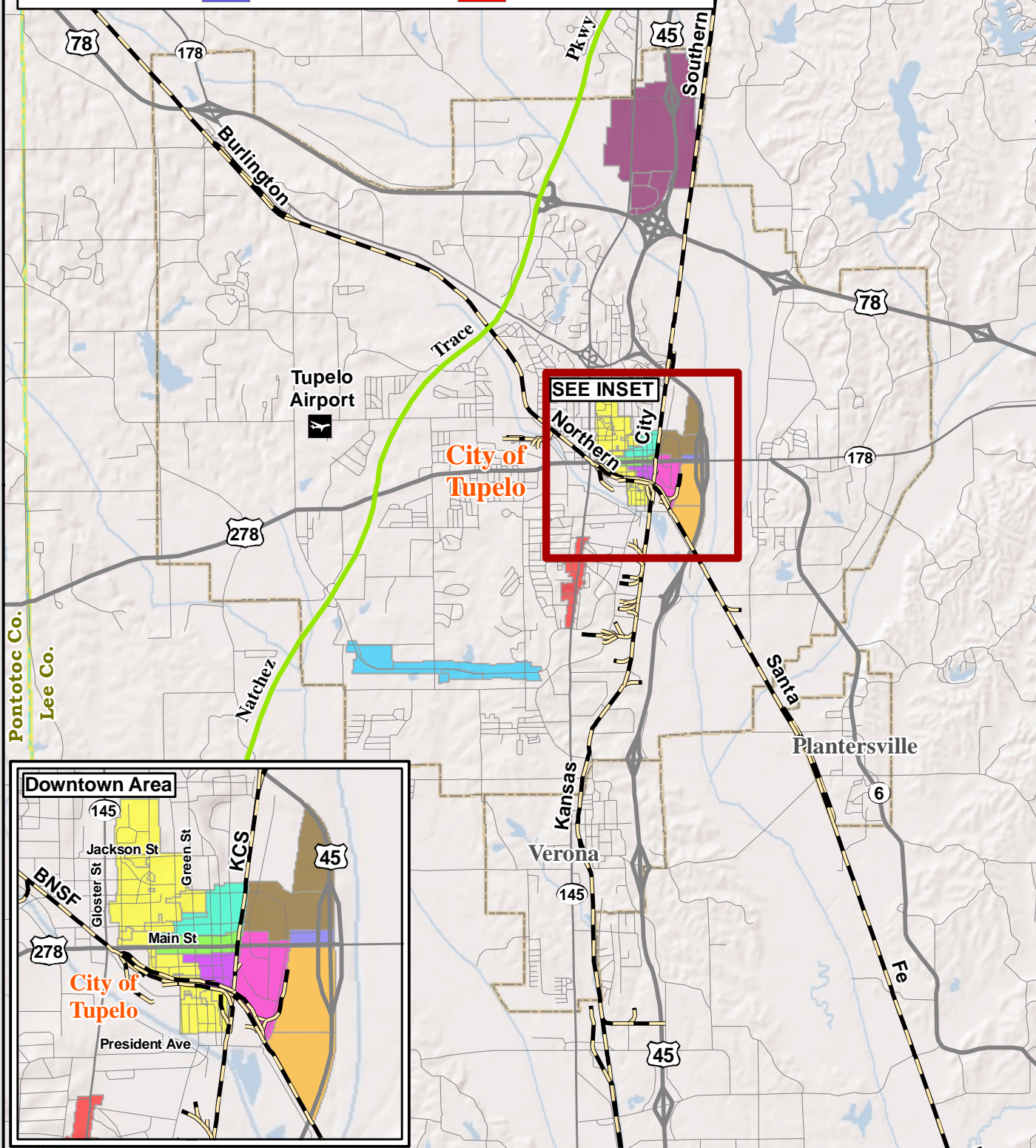
The 10 overlay districts (including subdistricts) are described as follows:

- **Downtown Overlay** - The purposes of this overlay district are to attract economic development and employment opportunities and preserve the existing character of the downtown area. Specific desired outcomes include:
 - enhancing the gateway to Tupelo,
 - reducing visual clutter,
 - enhancing landscaping, and
 - encouraging preservation of buildings.

This overlay district is subdivided into subdistricts to further guide activities occurring in this critical portion of the City. The subdistricts within the Downtown Overlay District are:

- City Center Retail Subdistrict
- Coliseum Center Subdistrict
- Downtown Gateway Subdistrict
- Fairgrounds Subdistrict

- | | | |
|-----------------------|--------------------------------|---------------------------------------|
| Railroads | City Boundary | Fairgrounds Redevelopment Subdistrict |
| Primary Roads | Barnes Crossing Overlay | Financial Subdistrict |
| Secondary Roads | City Center Retail Subdistrict | Historic Downtown Overlay |
| Other Roads | Cliff Gookin Overlay | Judicial Subdistrict |
| Natchez Trace Parkway | Coliseum Center Subdistrict | Major Development Subdistrict |
| County Boundary | Downtown Gateway Subdistrict | South Gloster Street Overlay |



Tupelo Mississippi Railroad Relocation Planning & Environmental Study

Overlay
Districts

Figure
3-5

- Financial Subdistrict
 - Judicial Subdistrict
 - Major Development Subdistrict
-
- **Barnes Crossing Overlay** - This is an area of rapid commercial growth. The purpose of this overlay district is to set guidelines to encourage only high quality retail development in order to prevent the decline in retail activity.
 - **Cliff Gookin Overlay** - This overlay district is located adjacent to Tupelo High School and a large, planned unit development area. The purpose of this overlay district is to provide a high standard of growth to protect the quality of life in the area.
 - **South Gloster Overlay** - The largest employer in the City, the NMMC, is located in this district. The district was established to prevent commercial and retail facilities from leaving the area and to provide a higher standard of commercial and retail facilities for people who work and shop in this area.

3.3 FARMLAND

Farmland is defined as land used for crop production including livestock and timber. The U.S. Department of Agriculture (USDA) NRCS classifies farmland into several different categories as part of the Federal Farmland Protection Policy Act (FPPA) of 1981. FPPA was enacted to reduce permanent conversion of important agriculture areas to non-agriculture activities due to federally funded programs. Specific characteristics are given to soil types that exhibit best tendencies to produce food, fiber, forage, oilseed and other agriculture crops and are not in urban or built-up areas. “Prime farmland” is designated as areas that are best suited for crop production with minimum inputs of fuel, fertilizer, pesticides and labor without intolerable soil erosion. “Unique farmland” is further defined as areas having special combinations of conditions to produce specific high-value food and fiber crops, including citrus, tree nuts, olives, cranberries, fruits and vegetables. The Mississippi Department of Agriculture further defines areas as “statewide and locally important” farmland. All designated soil types do not have to be agriculture production to be considered prime and unique farmland. Land tracts can be forested land or some other use; however, urban or open water areas are not considered. As part of FPPA, NRCS completes a Farmland Conversion Form (AD-1006) for all federally funded projects to assess potential irreversible impacts to farmland. Farmland within Tupelo’s city limits is not subject to FPPA because it is considered “urban” based on FPPA guidelines.

Crops grown within the affected environment include cotton, soybeans, corn, and grain. Timber, cattle, poultry, dairy production, and catfish farming are also important to Lee County. Catfish is a growing industry in the Blackland Prairie region, where the aquifer is deep, so ponds are surface water driven. There are no catfish ponds within the affected environment; however, these ponds can be found throughout Lee County. The USDA has established conservation programs to help restore natural ecological systems on the nation’s

farms. The purposes of these programs are targeted toward protecting the nation's long term capability to produce food and fiber, reducing soil erosion and sedimentation, improving water quality and creating better habitat for wildlife. Programs such as the Conservation Reserve Program (CRP), the Wetland Reserve Program (WRP) and the Grassland Reserve Program (GRP) provide valuable tax incentives to preserve some of the nation's most sensitive areas. There are no CRP, WRP or GRP tracts within the affected environment.

3.4 HISTORY AND DEMOGRAPHICS

3.4.1 History

Originally home to the Chickasaw Nation, the Tupelo area was an important link along the trade route now known as the Natchez Trace Parkway. In the late 1830's, the Chickasaw people were forcibly removed from the area under the Federal Indian Removal Act of 1830. The City of Tupelo was founded in 1859 after the completion of the Mobile and Ohio Railroad, and later incorporated in 1870. Tupelo's modern history can be traced to the convergence of the Mobile & Ohio and the Kansas City, Memphis & Birmingham Railroads in 1887. As a hub of transportation corridors, Tupelo became known as a rail distribution and manufacturing center.

Today, as the county seat of Lee County, Tupelo is a manufacturing, retail and distribution center.

3.4.2 Demographics

The City of Tupelo has a population of 35,673. Based on the 2000 Census counts, there were approximately 13,395 households, with a median household income of \$36,165. Approximately 67% of the population of the City of Tupelo is white and approximately 30% is Black or African American. There is a small Asian population (0.6%), a small population of Hispanic origin (1.4%), and a small population self-reported as two or more races (0.8%). The median age is 32, with 70% of the population over the age of 18 and almost 10% of the population over the age of 65.

3.4.3 Environmental Justice

Executive Order 12898 requires federal agencies to identify and address disproportionately high and adverse effects of federally funded projects on minority and low-income populations as part of the environmental justice (EJ) analysis. The EJ analysis is discussed in detail in **Chapter 4** of this report. Of the households within ½-mile of the existing BNSF main line, 14% are classified as minority households and 17% are classified as low-income households. Low-income households have been defined as those who have an annual household income below 80% of the median household income of Tupelo, or a household income of \$28,932 or less.

3.5 COMMUNITY FACILITIES

Neighborhoods, schools, churches, cemeteries, public facilities, parks and recreation areas, and emergency services facilities were identified within the affected environment.

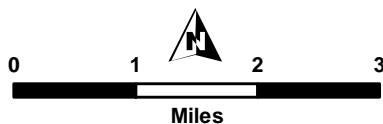
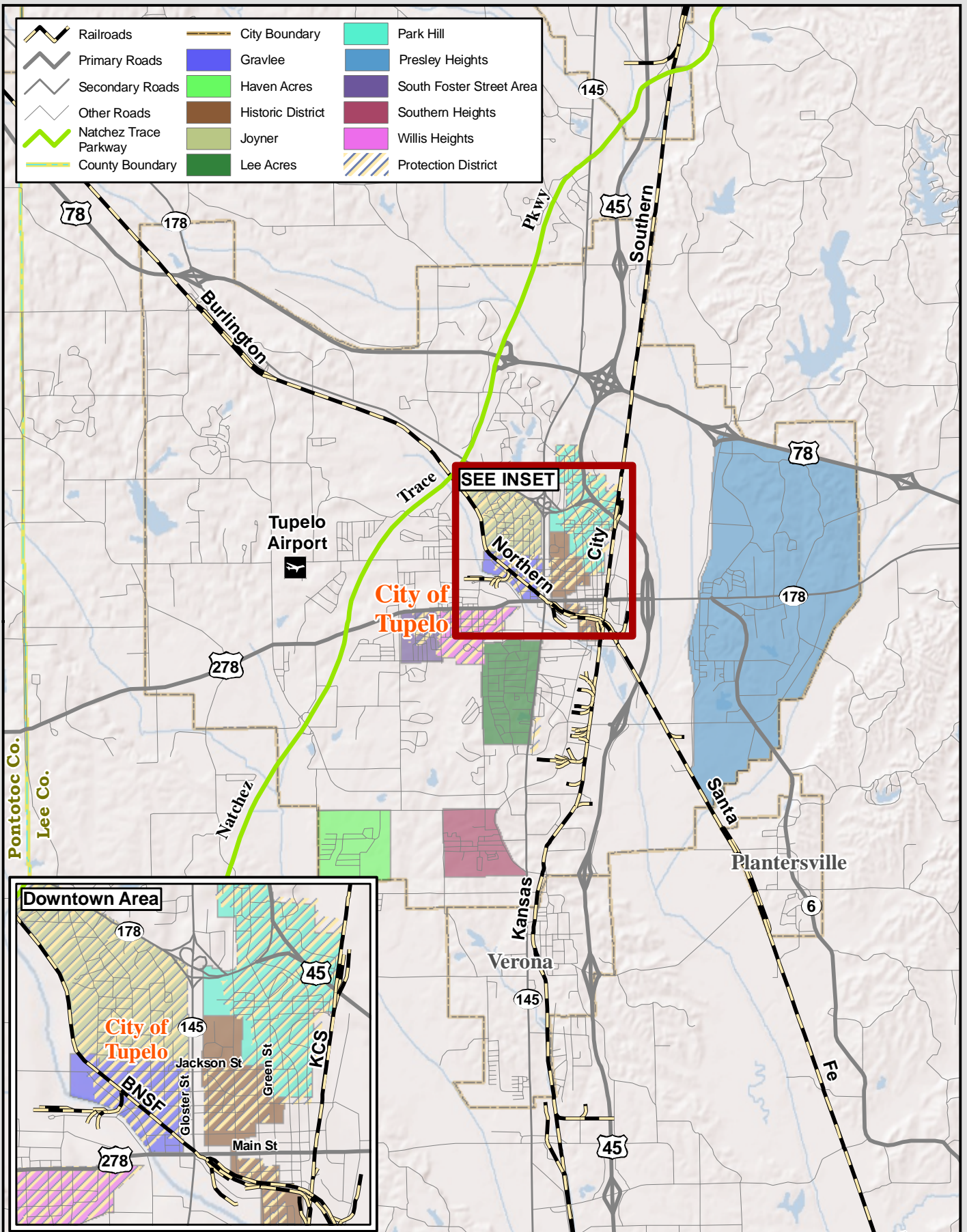
3.5.1 Neighborhoods

Tupelo has several areas of special concern, including those with neighborhood associations and neighborhood protection districts. A “neighborhood association” is a group of homeowners, renters, apartment dwellers, and neighborhood business, church, and school representatives who organize to improve conditions in the neighborhood. As members of an active neighborhood association, the people in the neighborhood decide what needs to be done and work together to make it happen. A group that represents the community has the stability, credibility, and political clout to be an effective force for a better neighborhood. The designated neighborhood associations in the City of Tupelo are shown on **Figure 3-6**.

Ten neighborhood associations are registered in Tupelo, including Downtown, Gravlee, Haven Acres, Lee Acres, Joyner, Park Hill, Presley Heights, South Foster Street, Southern Heights, and Willis Heights. Eight of the 10 districts are located within ½-mile of the proposed project:

- **Downtown** - This was the first neighborhood to form a neighborhood association. This community is recognized in the National Register of Historic Places (NRHP) and is economically and racially diverse.
- **Gravlee** - A diverse community of older, single-family dwellings, where many of the residents are tenants. West Jackson Street runs to the southeast of the district and serves as one of the gateways into the City.
- **Joyner** - This is the sister neighborhood to Gravlee, and the homes are primarily single-family cottages. Although racially diverse, there is a definite increase in income and property value as compared to the Gravlee neighborhood.
- **Lee Acres** – This west-side neighborhood includes primarily single-family housing in a diverse community with most of the residents being seniors and retirees with a small population of young families and singles.
- **Park Hill** - This is the oldest African American or Black community in the City, also another gateway both to the major retail hub at Barnes Crossing and to the City. The population is primarily retirees and senior citizens, mostly from the educational field with a diverse income base.
- **Presley Heights** - This is the largest neighborhood in terms of land area in the City. The area does not contain a large youth population, but rather contains more seniors and retirees. It is racially and economically diverse. It was originally a suburb, East Tupelo, before being annexed.

- | | | | | | |
|--|-----------------------|--|-------------------|--|--------------------------|
| | Railroads | | City Boundary | | Park Hill |
| | Primary Roads | | Gravlee | | Presley Heights |
| | Secondary Roads | | Haven Acres | | South Foster Street Area |
| | Other Roads | | Historic District | | Southern Heights |
| | Natchez Trace Parkway | | Joyner | | Willis Heights |
| | County Boundary | | Lee Acres | | Protection District |



Tupelo Mississippi Railroad Relocation Planning & Environmental Study

Neighborhoods &
Protection Dist.

Figure
3-6



- **Willis Heights** - The other west side neighborhood that anchors to Lee Acres is heavily populated with rental properties with minimal home ownership. The population ranges in age and is racially diverse.

Neighborhood Protection Districts, shown on **Figure 3-6**, are neighborhood areas designated for protection from declining property values, lack of maintenance, physical deterioration, disinvestment and abandonment, changes in ownership patterns, or changes in land use. Anyone who rents or buys a residence in this area would need a Residential Certificate of Occupancy in order to transfer utilities.

3.5.2 Schools

The public school system serves 7,624 students and is composed of 12 schools with student counts ranging from the low 100s (pre-K) to the high 1,000s (Tupelo High School). Of the 12 public schools, there are 10 elementary schools, one middle school, and one high school. In addition, the public school system also supports the King Early Childhood Center (pre-K), and the Career Center (grades 9 to 12). The University of Mississippi and Itawamba Community College have campus facilities in southeastern Tupelo near the intersection of Eason Boulevard and Veterans Boulevard. The University of Mississippi Advanced Education Center had 565 students (2006) and the Itawamba Community College Tupelo Campus had 1,165 students (2004 – 2005).

In general, development in the Tupelo area has moved to the western side of the City, and schools on the east side are now under-utilized. However, the school district is working to keep a demographic balance at all schools.

The existing BNSF main line passes most closely to the Joyner Avenue Elementary School just north of Jackson Street and to the Milam Elementary School just north of the Crosstown intersection.

Joyner Avenue Elementary is adjacent to the BNSF main line and with horn sounding required at the Jackson Street crossing, the elementary school is currently affected by approximately 23 trains per day, estimated to increase to approximately 40 trains per day by 2030. Joyner Avenue Elementary School has approximately 218 white, non-Hispanic children and 137 black, non-Hispanic children. The Joyner neighborhood is more typically associated with starter homes and typically has young families.

Milam Elementary School has approximately 319 white, non-Hispanic children and 359 black, non-Hispanic children. The Milam neighborhood contains older homes associated with the central and downtown Tupelo area. The Milam facility is proposed to be converted to a 6th grade school facility according to the Tupelo Public School District Future Excellence Plan (2009 restructuring).



3.5.3 Churches and Cemeteries

There are 58 churches and 12 cemeteries within the city limits of Tupelo. A public meeting was held in February 2008 at the Inspirational Community Baptist Church at 405 Clayton Avenue, which is one of several churches within close proximity to the existing BNSF main line. The comments received at this public meeting included statements that the church windows have been enclosed to mitigate the train noise and that train horns often interfere with studio recordings.

3.5.4 Public Facilities

Public facilities within the City of Tupelo include City, County, and Federal government buildings, events centers, attractions, museums, and retail establishments. However, some of these facilities, such as the Barnes Crossing Mall, Oren Dunn City Museum, and the Elvis Presley Birthplace and Museum, are located more than ½-mile from the existing BNSF main line. The public facilities that lie within ½-mile of the existing BNSF main line include:

- Tupelo Buffalo Park and Zoo
- Tupelo Furniture Market
- West Main Shopping Center
- Willow Bend Village Shopping Center
- Gloster Creek Village Shopping Center
- Tupelo Public Library
- Tupelo Post Office and Federal Building
- Tupelo City Hall
- Lee County Courthouse
- Tupelo Artist Guild
- Lyric Theatre
- Tupelo Convention and Visitors Bureau
- BancorpSouth Arena
- VF Factory Outlet Stores

3.5.5 Parks and Recreation

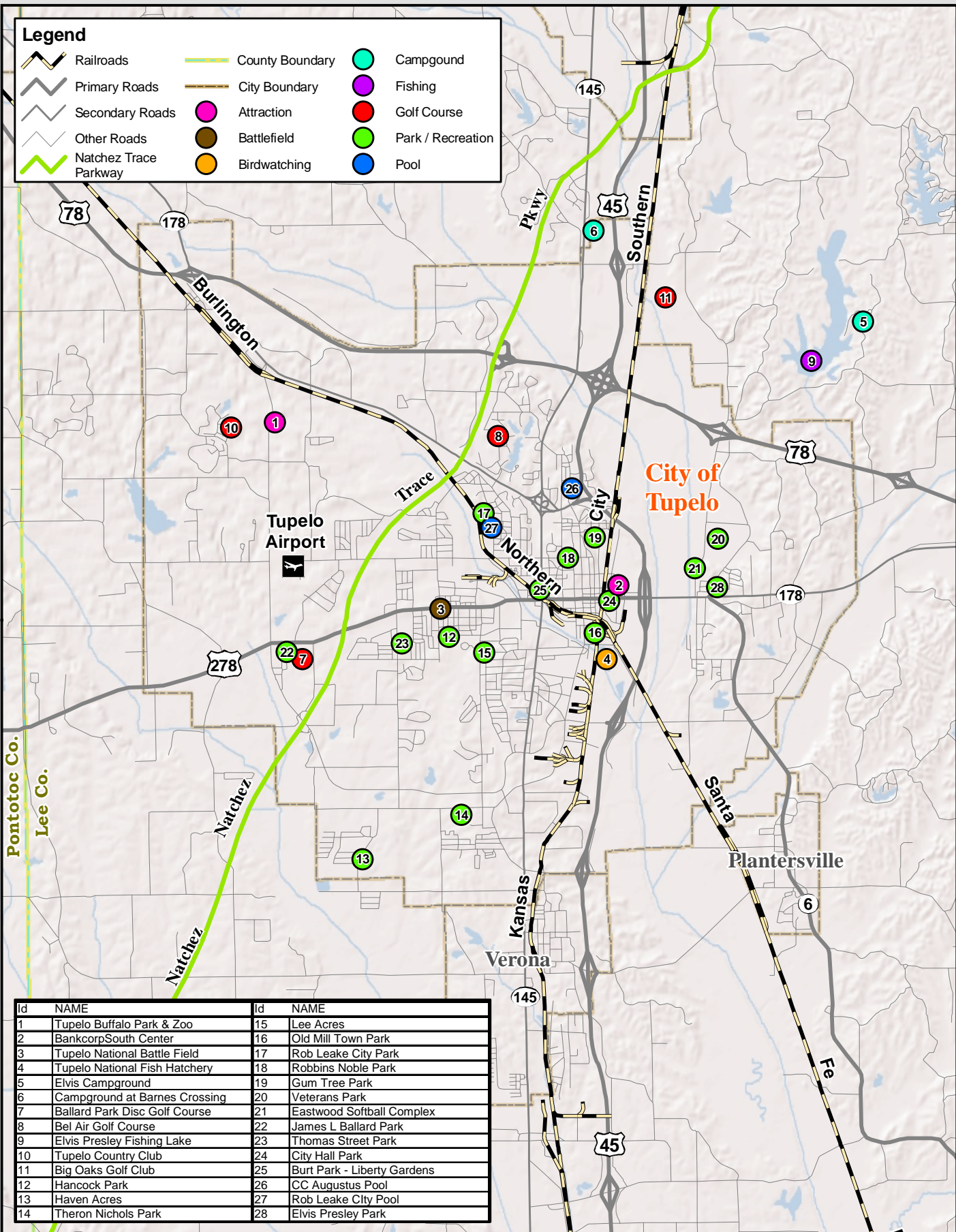
The City of Tupelo has 570 acres of City park land in 19 City parks and various walking tracks/trails, shown on **Figure 3-7**. Of the larger amenities, the Rob Leake City Park and the Tupelo Buffalo Park and Zoo are adjacent to the existing BNSF main line. Small parks and other open spaces exist at various points along the existing BNSF and KCS rail lines, such as Burt Park Liberty Gardens near the Crosstown intersection and Old Mill Town Park in the Mill Village area. The Tupelo National Battlefield and the Natchez Trace Parkway, a national scenic highway, are under the jurisdiction of the U.S. National Park Service and are also within the City of Tupelo. In addition, the Elvis Presley Lake and Campground and Tombigbee State Park are adjacent to the City of Tupelo, but both are outside the affected environment.

Legend

- Railroads
- Primary Roads
- Secondary Roads
- Other Roads
- Natchez Trace Parkway

- County Boundary
- City Boundary
- Attraction
- Battlefield
- Birdwatching

- Campground
- Fishing
- Golf Course
- Park / Recreation
- Pool



Id	NAME	Id	NAME
1	Tupelo Buffalo Park & Zoo	15	Lee Acres
2	BankcorpSouth Center	16	Old Mill Town Park
3	Tupelo National Battle Field	17	Rob Leake City Park
4	Tupelo National Fish Hatchery	18	Robbins Noble Park
5	Elvis Campground	19	Gum Tree Park
6	Campground at Barnes Crossing	20	Veterans Park
7	Ballard Park Disc Golf Course	21	Eastwood Softball Complex
8	Bel Air Golf Course	22	James L Ballard Park
9	Elvis Presley Fishing Lake	23	Thomas Street Park
10	Tupelo Country Club	24	City Hall Park
11	Big Oaks Golf Club	25	Burt Park - Liberty Gardens
12	Hancock Park	26	CC Augustus Pool
13	Haven Acres	27	Rob Leake City Pool
14	Theron Nichols Park	28	Elvis Presley Park



Two golf courses are within the Tupelo city limits. The Tupelo Country Club is a private 18-hole golf course located near the existing BNSF main line just south of Coley Road. The Bel Air Golf Course is a public 9-hole golf course located along the Natchez Trace Parkway just north of the existing BNSF main line. In addition, disc golf is a popular sport in the region, with courses at Ballard Park and at Veterans Park within the Tupelo city limits.

3.5.6 Medical and Emergency Services

3.5.6.1 Medical and Health Services

Tupelo is the headquarters of the NMMC, the largest non-metropolitan hospital in the United States. Located at 830 South Gloster Street, shown on **Figure 3-8**, the 650-bed facility has a service area that includes northern Mississippi, northwest Alabama, and portions of Tennessee. The medical center was a winner of the prestigious Malcolm Baldrige National Quality Award in 2006. Emergency vehicles en route to NMMC traverse the railroad crossings at Crosstown and Eason Boulevard an estimated 80 to 100 times per day and are delayed an average of four times per day. When stopped at these railroad crossings, an emergency vehicle can be delayed up to an additional 15 minutes before reaching the hospital. Because of the possibility that a particular crossing may be blocked by a train, emergency vehicle drivers frequently must choose between risking that the crossing is clear and waiting for a train to pass or taking an alternate route, either of which can dangerously increase response time.

North Mississippi State Hospital is located in Tupelo at 1937 Briar Ridge Road, shown on **Figure 3-8**. North Mississippi State Hospital is a State-owned psychiatric and chemical dependency facility offering 50 licensed beds.

There are 28 other medical facilities within the City of Tupelo, including four ambulatory surgical facilities, four licensed long-term care facilities, four licensed personal care homes, seven certified hospice providers, two certified rehabilitation centers, two home health agencies, a certified rural health clinic, a certified portable X-ray service, an end-stage renal disease facility, a certified community home, and the Lee County Health Department.

3.5.6.2 Fire Department

The Tupelo Fire Department operates seven stations located throughout the City of Tupelo, shown on **Figure 3-8**, running seven Emergency-One Pumpers, a Rescue, a Truck Company (1998 Emergency-One) and a 2001 Pierce Special Response Unit. The Tupelo Fire Department has a total of 87 staff employees including 81 employees in the Emergency Services Division, three employees in the Special Services Division, which includes a Training/Safety Officer, Fire Investigator, Fire Inspector, and administrative officers and staff.

Other services provided by the Tupelo Fire Department include:

- Fire suppression
- Basic on-site life support EMS services
- Trained special operation group of Dive Rescue Specialists
- Hazardous Materials Technicians
- Confined Space and Rope Rescue Specialists
- Weapons of Mass Destruction (WMD) Regional Response Team for the State of Mississippi

All of these services help to keep the community safe and maintain an Insurance Class Rating of Five. According to the City of Tupelo's website, the City's fire department averages approximately seven responses per day with an average response time of three minutes and six seconds (3:06). The Tupelo Fire/Rescue Training Center and the cooperative effort of many City employees and departments brought state-wide recognition to the City of Tupelo by winning the 2007 Overall Excellence award sponsored by the Mississippi Municipal League and the Clarion Ledger. Tupelo's Fire Department is also featured in several national ad campaigns for Emergency-One.

The following excerpt was obtained from the City of Tupelo's Fire Department Standard Operating Guidelines Manual and provides railroad crossing standard operation procedures to be followed by all emergency response units.

"In an emergency response mode upon approaching an unguarded railroad crossing the driver and company officer shall observe the warning system for operation, open the windows of the vehicle, turn the siren off, bring the vehicle to a complete stop prior to entering the crossing area, listen for a train warning signal and observe all directions for on-coming train traffic. Once the company officer and the driver has determined there is no train approaching, the driver may proceed across the rail crossing. An exception to turning off the siren would be when the rail crossing is at a four way intersection (i.e. Crosstown). At crossings of this nature, the hazards associated with automobile traffic at an intersection dictates that the driver and company officer use extreme caution when proceeding through the intersection and leave the warning siren activated in order to clear automobile traffic from the intersection."

3.5.6.3 Police Department

The Tupelo Police Department is divided into 14 divisions covering 10 patrol zones. These divisions include a records division, criminal investigative division, information technology division, reserve division, traffic division,

community outreach program division, patrol division, the North Mississippi narcotics unit, the school resource officers program, a special operations group, code enforcement division, special weapons and tactics (SWAT) division, and a crime stoppers division. The Tupelo Police Department also administers the North Mississippi Law Enforcement Training Academy.

The Lee County Sheriff's Department, shown on **Figure 3-8**, offers a wide range of services including a patrol division, a criminal investigative division, a narcotics unit, a special operations unit, a SWAT division, and a reserve unit. The Lee County Sheriff's Department also administers the Lee County Juvenile Detention Center, the Lee County Work Center, and the Tupelo/Lee County Adult Jail which holds prisoners for not only the Lee County Sheriff's Department, but also for Tupelo and all other municipalities within Lee County. The adult jail was completed in 1997 and can house approximately 200 prisoners.

3.6 CULTURAL RESOURCES

Each cultural resource encountered as part of the Tupelo Railroad Relocation Planning and Environmental Study investigation, as documented in the *Cultural Resources Investigations for the Tupelo Railroad Relocation Study* (Brockington, January 2009), was assessed for potential eligibility for listing on the NRHP based on the significance criteria set forth in 36 CFR Part 60.4, shown in **Table 3-3**. The criteria for evaluation are based on the quality of significance in American history architecture, archaeology, engineering, and culture are present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association.

Table 3-3 Criteria for NRHP Eligibility

Criterion Level	Eligibility Description
A	Property associated with events that have made a significant contribution to the broad patterns of our history.
B	Property associated with the lives of persons significant in our past.
C	Property that embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represents a significant and distinguished entity whose components may lack individual distinction.
D	Property that has yielded, or may be likely to yield, information important in prehistory or history.

A resource may be eligible under one or more of these criteria. Criteria A, B, and C are most frequently applied to historic buildings, structures, objects, districts, or non- archaeological sites (e.g., battlefields, natural features, designed landscapes, or cemeteries). The eligibility of archaeological sites is most frequently considered with respect to Criterion D. Also, a general guideline of 50 years of age is employed to define "historic" in the NRHP evaluation

process. That is, all resources greater than 50 years of age may be considered. However, more recent resources may be considered if they display “exceptional” significance.

According to 36 CFR Section 800.16(d), the Area of Potential Effects (APE) for the affected environment is defined as that area within the existing BNSF right-of-way and an approximate 500-foot buffer on each side of the existing right-of-way, as well as a 500-foot buffer on each side of the right-of-way for the proposed interchange. The buffer width was coordinated with Mississippi Department of Archives and History (MDAH) to account for possible visual or noise impacts.

3.6.1 Archaeological Sites

As documented in the *Cultural Resources Investigations for the Tupelo Railroad Relocation Study* (Brockington, January 2009) (CRS), three previously unrecorded archaeological sites were located within or adjacent to the APE. At the previously unrecorded archaeological site located just east of the intersection of Jefferson Street and the BNSF main line, shovel tests produced a light density of archaeological materials dating to the late nineteenth and early twentieth century, indicating the presence of a domestic structure. The site had been disturbed and dates to a relatively recent time period. The previously unrecorded archaeological site located within the BNSF right-of-way just south of Jackson Street and was identified by the presence of historic debris, which was considered to be the result of incidental trash dumping rather than an archaeological site. The previously unrecorded archaeological site located in the proposed interchange area just south of the Pvt. John Allen Fish Hatchery consists of two sewer manholes. None of these archaeological sites was considered eligible for listing in the NRHP.

3.6.2 Architectural Resources

As documented in the CRS, 58 architectural resources (30 previously recorded and 28 previously unrecorded) were located within or adjacent to the APE, shown on **Figure 3-9**. The majority of the architectural resources fell within NRHP-eligible historic districts, consisting mainly of early to mid-20th Century residential architecture. Of those 58 resources, 13 had been demolished. Three architectural resources are listed on the NRHP.

- **Superintendent’s House, Pvt. John Allen Fish Hatchery**

The Pvt. John Allen Fish Hatchery includes the NRHP-listed Superintendent’s House. The property was listed in 1988 as an excellent example of the Queen Anne architectural style. The NRHP boundary was designed to include the house and 100 feet in each direction, totaling less than 0.5 acres, and excludes the grounds and non-contributing outbuildings. The present NRHP boundary is visually protected by dense vegetation along its northern and eastern perimeters and is oriented westward towards Elizabeth Street. In addition, upon review of 1958 aerial maps, the surrounding landscape has been subject to substantial changes, including the destruction of warehousing north of Elizabeth Street and the extension of Elizabeth Street eastward across the BNSF main line.



Under the authority of Section 304 of the National Historic Preservation Act, this map is not for public disclosure due to the sensitive nature of identified cultural resources.



- **Mill Village Historic District**

The Mill Village Historic District was listed on the NRHP in 1992. The Mill Village Historic District is located south of the existing BNSF main line along Green Street and includes an industrial complex and associated employee housing. During field inspection, it appeared as if some of the contributing houses were being prepared for removal or relocation. In addition, one mill building, identified as Mill #2 east of Spring Street, has been demolished. However, the District remains largely intact and retains its NRHP integrity. The northern border of this District abuts the BNSF right-of-way.

- **South Church Street Historic District**

In 1992, the South Church Street Historic District was listed on the NRHP as an intact example of an early 20th Century neighborhood, associated with the residential development of Tupelo. The District consists of local interpretations of the bungalow, Colonial Revival, Craftsman, and foursquare house types. The district includes 19 contributing residences. The boundary was designed to exclude offices and light industry located north of the Elliot Street intersection.

In a letter dated March 17, 2009, included in **Appendix A**, coordination with the SHPO determined that of the remaining 42 architectural resources not NRHP-listed or demolished, 35 were deemed eligible for listing with NRHP. The SHPO determined that these 35 NRHP-eligible individual properties or historic districts appear to retain their historic architectural integrity.

These include two proposed NRHP-eligible historic districts and one proposed local historic district. The proposed Gravlee Historic District is bisected by the existing BNSF main line between Jackson Street and Crosstown. The proposed North Neighborhood Historic District clips a small portion of the APE with its southwest boundary. This portion of the neighborhood is within view of modern commercial and business development along Main and Gloster Streets. The local Tupelo Preservation Commission has discussed designating a Joyner Avenue district as a local historic district. This proposed district, while not finalized, is bounded by the existing BNSF main line on the west and includes early to mid-20th Century residential housing, a school, ball fields, tennis courts and a swimming pool. The boundary was drawn to exclude the railroad.

3.6.3 Native American Resources

The Chickasaw people inhabited the Lee County area at least as long as, but probably much longer than, the tribe's contact with European visitors in the 1500s. The archaeology of the tribe's settlements has become a burgeoning field of study. All of the archaeological and documentary evidence suggest the Chickasaw towns were located in and around Lee County, with a particular concentration in present-day Tupelo.



The Cobb Institute of Archaeology, associated with Mississippi State University in Starkville, has conducted numerous Chickasaw surveys and data recovery projects in and around the Tupelo area. Based on experience and knowledge of the area, the Cobb Institute contends that previously unrecorded archaeological sites would be concentrated along ridgelines and on the upland areas, especially in those areas to the south and west of the City of Tupelo. Based on the Cobb Institute studies, these sites are also very likely to contain burials due to the Chickasaw tradition of burying the dead underneath their homes. However, the existing BNSF main line and proposed interchange area are in relatively low-lying areas near Kings Creek and Town Creek, which are areas not known to hold Chickasaw settlements. There are no documented Chickasaw settlements within the existing BNSF right-of-way or the proposed interchange area.

3.7 AIR QUALITY

The Clean Air Act directed the EPA to establish standards for clean air. As a result, the EPA established NAAQS for six atmospheric pollutants that affect the air quality of a region. These pollutants are carbon monoxide, particulate matter, volatile organic compounds, ozone, oxides of nitrogen, lead, and sulfur dioxide. Each pollutant is described below:

Carbon Monoxide (CO)

CO is an odorless, colorless gas formed by the burning of fuels containing carbon. Motor vehicles are the principal source of CO emissions in urban areas. Maximum concentrations usually occur near intersections and other areas of traffic congestion, and they decrease rapidly with distance from the source. CO exposure can cause dizziness and fatigue and can impair central nervous system functions. Exposure to high levels of CO can cause immediate death.

Particulate Matter (PM_{2.5} and PM₁₀)

Particulate matter enters the air from industrial operations, vehicular traffic and other sources, including fireplaces. Most of the particulate matter generated by motor vehicles consists of suspended road dust. Measurements of particulate matter concentrations include TSP (total suspended particulates), PM₁₀ (particles with a diameter less than or equal to 10 micrometers), and PM_{2.5} (particles with a diameter less than or equal to 2.5 micrometers). Particles of this size can be inhaled, and can irritate the human respiratory tract and aggravate pre-existing respiratory diseases. Certain populations, such as children, the elderly, exercising adults, and those suffering from asthma or bronchitis, are especially vulnerable. Very small particles of substances such as lead (Pb), sulfates, and nitrates can cause lung damage directly, can be absorbed into the blood stream and cause damage elsewhere in the body, and can transport adsorbed gases, such as chlorides or ammonium into the lungs and cause injury.



Volatile Organic Compounds (VOCs)

VOCs are a key component in the formation of ozone (O_3). These hydrocarbons are emitted or evaporate into the atmosphere from a variety of sources, particularly the storage and combustion of fuels in motor vehicles.

Ozone (O_3)

O_3 in the lower atmosphere is a harmful air pollutant and contributes to the formation of smog. It is a secondary pollutant formed by the reaction of VOCs and nitrous oxides (NO_x) in the presence of sunlight. O_3 levels are reduced by minimizing emissions of those precursor pollutants. O_3 can cause eye and respiratory irritation, reduces resistance to lung infections, and may aggravate pulmonary conditions in individuals with lung disease. Elevated O_3 levels can cause vegetation damage.

Oxides of Nitrogen (NO_x)

NO_x are gaseous mixtures of NO and NO_2 that can damage or irritate the human respiratory system and exacerbate damage from respiratory disease and other existing forms of irritation. NO_2 may reduce resistance to certain infections. It is also a precursor of O_3 . NO_2 is a product of high-temperature combustion, emitted generally by the same sources as CO. High concentrations of NO_2 cause brown haze readily observed in urban areas during periods of heavy air pollution.

Lead

Lead (Pb) is a particulate pollutant that is also a carcinogenic air contaminant. In the past, automobiles were the chief contributors of Pb to the atmosphere in the U.S. Currently, lead is primarily emitted in the U.S. from a relatively small number of point sources such as smelters and battery plants.

Sulfur Dioxide (SO_2)

SO_2 is a product of the combustion of high-sulfur fuels, such as many grades of coal and oil. SO_2 is a human respiratory irritant. It combines with moisture in the atmosphere to form sulfuric acid and can damage vegetation and exterior facades of buildings.

According to the Center for Disease Control (CDC) website, transportation-related pollutants are large contributors to unhealthy air quality. The pollutants most attributed to motor vehicle use include CO, $PM_{2.5}$ and PM_{10} , NO_x and VOCs, which combine with sunlight to form ground-level O_3 , as well as other air toxins. The EPA reported that motor vehicles are responsible for nearly half of smog-forming VOCs, more than half of the NO_x emissions, and about half of the toxic air pollutant emissions in the United States. Motor vehicles, including non-road vehicles, account for 75% of CO emissions nationwide.

The Air Quality Index (AQI) is a tool used by EPA and other agencies to provide the public with timely and easy-to-understand information on local air quality and whether air pollution levels pose a health concern. The AQI tells the public how clean the air is and whether or not they should be concerned for their health. The AQI is focused on health effects that can

happen within a few hours or days after breathing polluted air. The annual maximum AQI level experienced in Lee County from 1999-2007 ranged from 107 in 2004 to 156 in 1999. An AQI level between 101 and 150 is classified as “unhealthy for sensitive groups” and means that the general public is not likely to be affected, but sensitive groups may experience some health effects. An AQI level of 156 is classified as “unhealthy” and means anyone may begin to experience health effects, especially members of sensitive groups. The annual minimum AQI level experienced in Lee County from 1999-2007 ranged from 2 in 2003 to 13 in 2007. An AQI level of 2 is classified as “good” and means the air quality is considered to be satisfactory and air pollution poses little or no risk.

Of the pollutants monitored in the Tupelo area in the past 10 years, O₃ has been the most problematic in terms of threatening possible noncompliance with the NAAQS. This is exacerbated by the fact that in 2007, the 8-hour O₃ NAAQS was reduced from 0.08 ppm to 0.075 ppm. The most recent data shows compliance with the reduced NAAQS, but by only a small margin (0.073 ppm). However, O₃ levels in Tupelo have been showing a general downward trend in recent years, probably due to national-level EPA efforts to better control O₃ precursor pollutants (VOCs and especially NO_x).

The current EPA designations have Lee County as in “attainment” with respect to NAAQS for all pollutants. Based on the monitoring data and the trends indicated, it does not appear that the area is likely to become a “nonattainment” area in the foreseeable future. For this reason, a conformity analysis is not required.

3.8 NOISE AND VIBRATION

3.8.1 Noise

Noise pollution can be defined as displeasing human or machine-created sound that disrupts the environment. This unwanted sound can seriously affect and damage physiological and psychological health. Noise pollution can cause annoyance and aggression, hypertension, high stress levels, tinnitus, hearing loss, and other harmful effects depending on the level of sound. Noise can interrupt ongoing activities and can result in community annoyance, especially in residential areas. In general, most residents become annoyed when noise interferes significantly with activities such as sleeping, talking, noise-sensitive work, listening to the radio, and watching television. In addition, some land uses, such as outdoor concert pavilions, are inherently incompatible with high noise levels.

Noise pollution in the downtown Tupelo area can be attributed to either traffic-related noise or railroad-related noise. Noise pollution generated by railroad operations is considerably higher than noise pollution created by motor vehicle traffic. Sources of railroad-related noise include the diesel exhaust engine, the interaction between the wheels and track, and the audible warning devices such as horns and bells.

Locomotive horns are loud, and horn noise is often the major contributor of adverse noise impacts in a community. Sound exposure from locomotive horns in the



downtown Tupelo area does not reach the cumulative levels that would exceed risk criteria for hearing damage. The horn noise model, established by measurements for the FRA, is based on a sound exposure level of 107 decibels (dBA) at 100 feet from the tracks for locations no closer than 660 feet from an at-grade crossing. In order to risk the onset of hearing damage, a person at that distance would have to hear more than 180 horn events during each eight-hour period for five days a week and continuously for 40 years. These conditions would yield an eight-hour equivalent continuous sound pressure level of 85 dBA.

The FRA and the Federal Transit Administration (FTA) have established noise level criteria to account for the startle effect on humans and wildlife and the noise sensitivity of different land uses. These criteria vary based upon the proposed land use of the receptor site. The land uses are segregated into three categories, shown in **Table 3-4**. The majority of the noise receptor sites adjacent to the existing BNSF corridor would be considered either Category 2 or Category 3 land uses. For Category 2 land uses, the noise impacts are measured using the outdoor day-night sound level (Ldn). The Category 3 land uses have the noise impacts measured using the hourly average sound level (Leq(h)).

Table 3-4 FTA/FRA Land Use Categories and Noise Metrics

Land Use Category	Noise Metric ⁽¹⁾ (dBA)	Description of Land Use Category
1	Outdoor Leq(h) ⁽²⁾	A tract of land where quiet is an essential element of their intended purpose. This includes lands set aside for serenity and quiet and such land uses as outdoor amphitheaters and concert pavilions, as well as National Historic Landmarks with significant outdoor use.
2	Outdoor Ldn	Residences and buildings where people normally sleep. This includes homes, hospitals and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.
3	Outdoor Leq(h) ⁽²⁾	Institutional land uses with primarily daytime and evening uses. This includes schools, libraries, and churches where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material. Buildings with interior spaces where quiet is important, such as medical offices, conference rooms, recording studios and concert halls fall into this category, as well as places for meditation or study associated with cemeteries, monuments, museums. Certain historical sites, parks and recreational facilities are also included.
⁽¹⁾ For certain uses other than freight trains, “onset-rate” adjusted sound levels (Leq, Ldn) are used. There is no “onset-rate” adjustment for freight trains.		
⁽²⁾ Leq for the noisiest hour of transit-related activity during hours of noise sensitivity.		

Ambient noise levels above 65dBA are considered “normally unsatisfactory” by the HUD, however that is not the only metric used to evaluate noise impacts. The FTA/FRA noise impact model evaluates projects as having No Impact, Moderate Impact, or Severe Impact on a graduated scale based on the amount of existing



ambient noise. The FTA/FRA noise impact evaluation model is rather conservative, as improvements made to an existing corridor could have a noise impact even if the amount of noise is not increased by the proposed project. The FTA/FRA noise impact criteria are applied at the closest sensitive receptor, which generally means the closest sensitive human land use.

As documented in the *Noise and Vibration Assessment for the Tupelo Mississippi Railroad Relocation* (HDR, June 2008) (NVA), included in **Appendix E**, the existing noise conditions in the City of Tupelo were documented through a series of 24-hour continuous measurements performed at seven different sites and short-term measurements performed at two sites on May 12-15, 2008. The 24-hour measurement sites were selected within the project area to be representative of the sensitive receptors near the existing BNSF and KCS rail lines. All of the sites were either multi-family or single-family residential sites. The short-term measurement sites were located within 50 feet of the existing BNSF main line to capture the pass-by noise levels of BNSF trains.

Five of the seven 24-hour measurement sites recorded Ldn values exceeding the 65 dBA HUD threshold. Evaluation of these sites with the FTA/FRA noise impact evaluation model found that five of the seven sites would exceed the Severe Impact threshold and all seven of these sites would exceed the Moderate Impact threshold. This would mean that any improvements to the corridor could require noise abatement measures to reduce the level of noise from the railroad corridor. The short-term measurements recorded locomotive engine noise for six train pass-bys between 86 to 90 dBA, rail car noise between 96 to 105 dBA, and train horn noise of 101 to 117 dBA at a distance of 50 feet from the railroad. These measurements were used to develop the noise models for both the No-Build and Build Alternatives, as discussed in **Chapter 4**.

3.8.2 Vibration

Trains are also a common source for ground-borne vibration. Train wheels rolling on a rail create vibration energy that is transmitted through the track support system. The amount of energy that is transmitted is strongly dependent on factors such as how smooth the wheels and rails are and the resonance frequencies of the vehicle suspensions system and the track support system.

The track support system would influence the level of ground-borne vibration levels. A rail system would be either subway, at-grade, or elevated. It is rare for ground-borne vibration to be an issue with elevated railways except when guideway supports are located within 50 feet of buildings. For an at-grade guideway, directly radiated noise is usually the dominant issue, although vibration can be an issue.

The background vibration velocity level in residential areas is usually 50 vibration decibels (VdB) or lower, well below the threshold of perception for humans, which is around 65 VdB. Human response to vibration is not usually significant unless the



vibration exceeds 70 VdB. At 85 VdB, most people are strongly annoyed. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 10 VdB or less. A vibration level that causes annoyance is well below the damage threshold for normal buildings. According to FTA, light rail systems typically generate vibration levels of 70 VdB or more near their tracks.

The effects of ground-borne vibration include detectable movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Ground-borne vibration is almost never annoying to people who are outdoors. Although the motion of the ground may be perceived, without the effects associated with the shaking of a building, the motion does not provoke the same adverse human reaction. In addition, the rumble noise that usually accompanies the building vibration is perceptible only inside buildings. Vibration impacts may unreasonably interfere with the comfortable enjoyment of life and property.

The FRA and FTA have also established vibration criteria to identify and mitigate annoyance from rail operations. These criteria are set far below the damage thresholds for normal structures. The impact thresholds are based on the maximum ground vibration caused by a typical train pass-by and are lower for frequent events than for infrequent events. A vibration event is defined as the vibration created from a passing locomotive or rail car. As documented in the NVA in **Appendix E**, FTA/FRA defines frequent as more than 70 vibration events per day. Tupelo averages more than 20 trains on the BNSF main line, and far exceeds the 70 events per day criteria, so the frequent criteria were applied to both locomotives and rail cars. The applicable vibration impact threshold for the BNSF main line was 72 VdB and the applicable vibration impact threshold for the KCS rail line was 80 VdB.










3.9 GEOLOGICAL RESOURCES

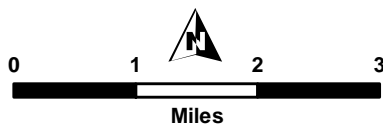
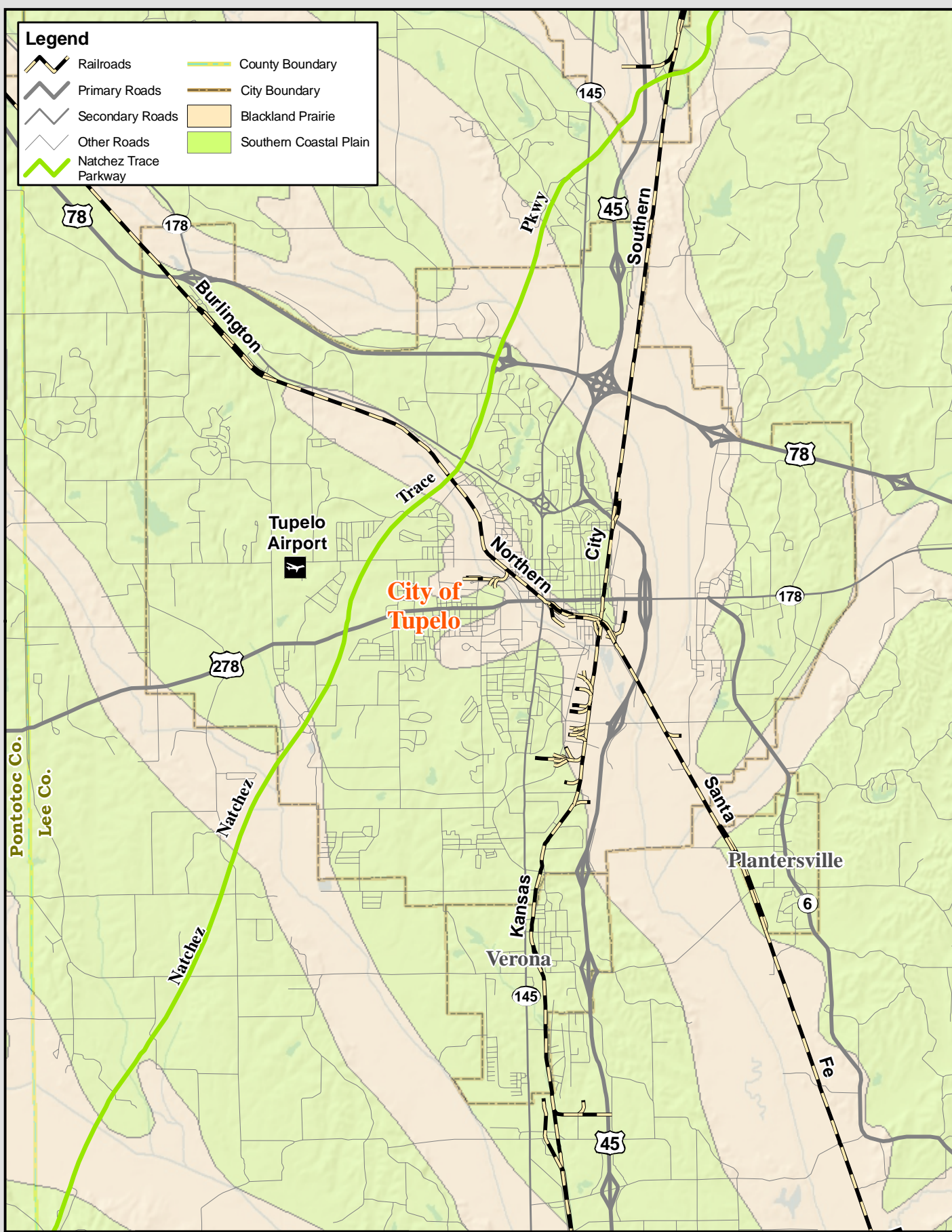
Geology and soils data of the region were compiled using GIS information as well as relevant literature. The affected environment was visited in December of 2007, and general geology and soil data were verified. The USDA NRCS was consulted in regard to prime and unique farmland as well as tracts enrolled in various conservation programs.

3.9.1 Geology and Topography

The affected environment is located in the USDA's Inner Coastal Plain Land Resource Region (LRR). Topography of the affected environment ranges from nearly level to undulating irregular plains. The affected environment lies in the Alabama and Mississippi Blackland Prairie Major LRR, shown on **Figure 3-10**. The Blackland Prairie is a thin, arc-shaped band of fertile, rolling hills curving from Tupelo to Columbus, Mississippi and south to Montgomery, Alabama. This thin belt of prairie land is flat to gently undulating. Near Tupelo, the Blackland Prairie region generally follows perennial streams, located in valleys of the Tombigbee Hills.

Legend

	Railroads		County Boundary
	Primary Roads		City Boundary
	Secondary Roads		Blackland Prairie
	Other Roads		Southern Coastal Plain
	Natchez Trace Parkway		



**Tupelo Mississippi Railroad Relocation
Planning & Environmental Study**

**Major Land
Resources**

**Figure
3-10**



3.9.2 Soils

The soils of Lee County formed from sediments deposited during the late Mesozoic and early Cenozoic eras when the Gulf of Mexico stretched northward to Cairo, Illinois. Sands, silts, clays, and calcareous formations remained as the Gulf of Mexico retreated to form parent material for the soils found today. The entire region is underlain by Selma Chalk formed from Upper Cretaceous marine deposits. The area's soils have a high clay content underlain by Cretaceous-age soft limestone, chalk or marl. Much of the affected environment is found in floodplains; therefore, the soils have formed from fairly recent alluvium and are underlain by Demopolis chalks.

The primary soil association for the affected environment is Leeper-Catalpa-Marietta, which is formed in clayey and loamy alluvium washed from nearby uplands. These soils range from somewhat poorly-drained to moderately well-drained soils and are located on floodplains. Almost all of this association is in row crop, pasture or urban land. Urban areas, located mainly within Tupelo's City limits, have been altered so extensively that soil series are no longer distinguishable.

Marietta is the dominant soil type composing over 40% of the affected environment. Marietta is a moderately well-drained, nearly level soil formed on loamy alluvium. This soil has a moderate shrink swell potential, and a high water holding capacity. This soil series is typically found on floodplains.

The Ora soil series is moderately well drained, formed in loamy material. This soil has a fragipan, which is an altered subsurface soil layer that restricts water flow and root penetration. Permeability is moderate in the upper portion and moderately slow in the fragipan. Water holding capacity and runoff is medium. Ora soils are typically found on side slopes and ridge tops.

Tuscumbia is a poorly-drained soil formed on clayey alluvium. Available water-holding capacity is high and runoff is slow. The soil has a moderate shrink-swell potential in the topsoil and very high potential in the subsoil. The soil shrinks and cracks when dry and is found along floodplains. This soil type is found primarily in the operational improvement zone of the Build Alternative.

Shrink-swell potential is rated according to the expected volume change of soil layers resulting from moisture. Ratings depend on the amount and volume of clay in soil horizons and are ranked as either low, moderate, high, or very high. Leeper (Le and Lp), Tuscumbia (Tu) and Una (Un) are soils which have high to very high shrink-swell potential. Site-specific engineering practices are required for structures placed on these soil types to avoid injury to the structure as the soil shrinks and swells.

3.10 WETLANDS

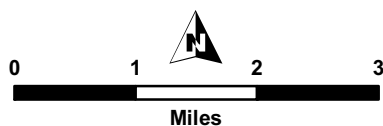
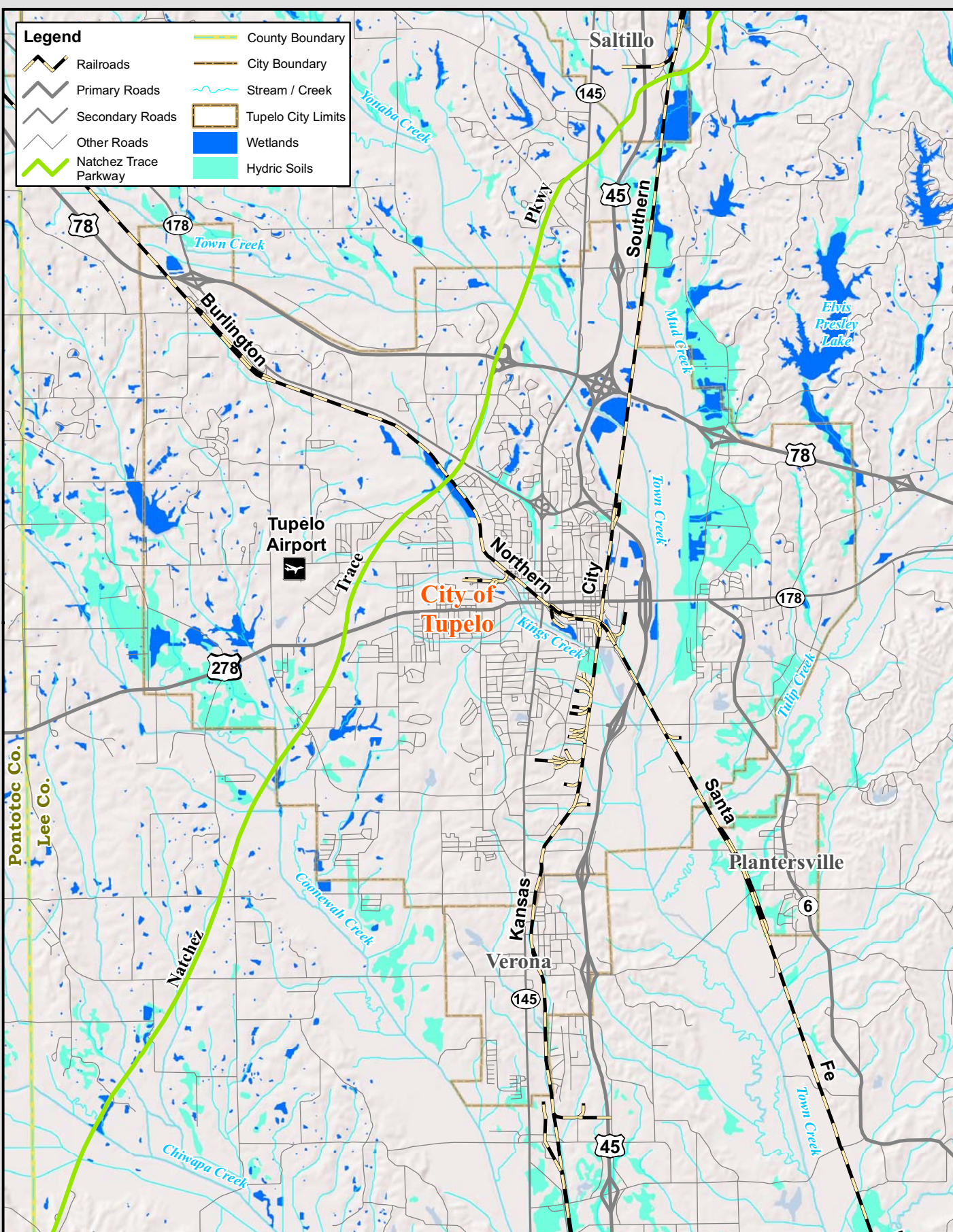
Wetlands are extremely important features in any landscape. They provide stormwater detention, nutrient cycling, organic carbon sequestration, flood water mitigation, contaminant removal, and critical fish and wildlife habitat. Due to the function and value of wetlands to a landscape and increased developmental pressures, wetlands are protected under the Clean Water Act (CWA). The USACE has regulatory authority over waters of the United States, including wetlands, under Section 404 of the CWA. Wetlands are defined in the *USACE Wetland Delineation Manual* (USACE, 1987) as “areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” Areas must exhibit the following three characteristics: hydric soil, hydrophytic vegetation, and adequate hydrology. Dredging or filling activities in areas fitting this definition are required to receive a Section 404 permit from USACE.

Wetlands are further classified according to their placement in a landscape. All wetlands within the affected environment can be described as palustrine forested and palustrine scrub-shrub, shown on **Figure 3-11**. Although forested wetlands are located within the affected environment, the dominant class of wetlands is scrub-shrub. This is due to the fact that almost all the affected environment is either in an agricultural or urban land use. Most of the vegetation either has been cleared previously or is maintained as part of a utility or transportation right-of-way. Large, undisturbed forested wetland areas are not found within the affected environment.

Streams and open water habitat are also considered for a Section 404 permit from the USACE. Impacts that require a Section 404 permit include, but are not limited to, placement of culverts or pipes within the ordinary high water mark of a stream and alteration of channel morphology. Bridge construction over creeks that does not involve dredging or filling does not require a permit as no improvements take place in waters of the U.S. Within the affected environment ephemeral, intermittent, and perennial streams were evaluated, and jurisdictional determination forms were completed, according to guidelines set out in the Rapanos Guidance (2007). The three major streams within the affected environment are Kings Creek, Mud Creek, and Town Creek. There is also a wetland that parallels the existing BNSF main line southeast of its crossing with the Natchez Trace Parkway, shown on **Figure 3-11**.

Across the U.S., many historical wetlands have been converted to farmland. Wetland areas converted to agriculture prior to December 23, 1985 carry special exemption from the CWA, as long as the area continues to receive agricultural influences at a minimum of 5-year intervals, as defined by Section 512.15 of the National Food Securities Manual (1988). Prior converted cropland consists of wetlands that were both manipulated (drained or otherwise altered to remove excess water from the land) and cropped before December 23, 1985, to the extent that they no longer exhibit wetland values. These lands have experienced such extensive manipulation that “normal circumstances” cannot support a prevalence of hydrophytic vegetation and are not subject to regulation under Section 404 of the CWA.

- Legend**
- Railroads
 - Primary Roads
 - Secondary Roads
 - Other Roads
 - Natchez Trace Parkway
 - County Boundary
 - City Boundary
 - Tupelo City Limits
 - Stream / Creek
 - Wetlands
 - Hydric Soils



Tupelo Mississippi Railroad Relocation Planning & Environmental Study

Wetlands &
Hydric Soils

Figure
3-11

Most of the farmland in the affected environment can be classified as prior converted cropland.

These areas do not require a Section 404 permit for agricultural activities, and they typically do not require a permit for other uses because conditions of the site have been so altered that they no longer exhibit functions and values of a wetland. However, if USACE determines that any of the three wetland characteristics of a particular site are strong enough to support wetland functions, then a Section 404 permit may be required for land use change away from agriculture.

3.11 FLOODPLAINS

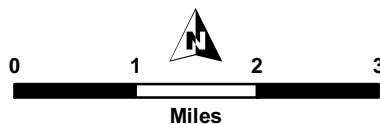
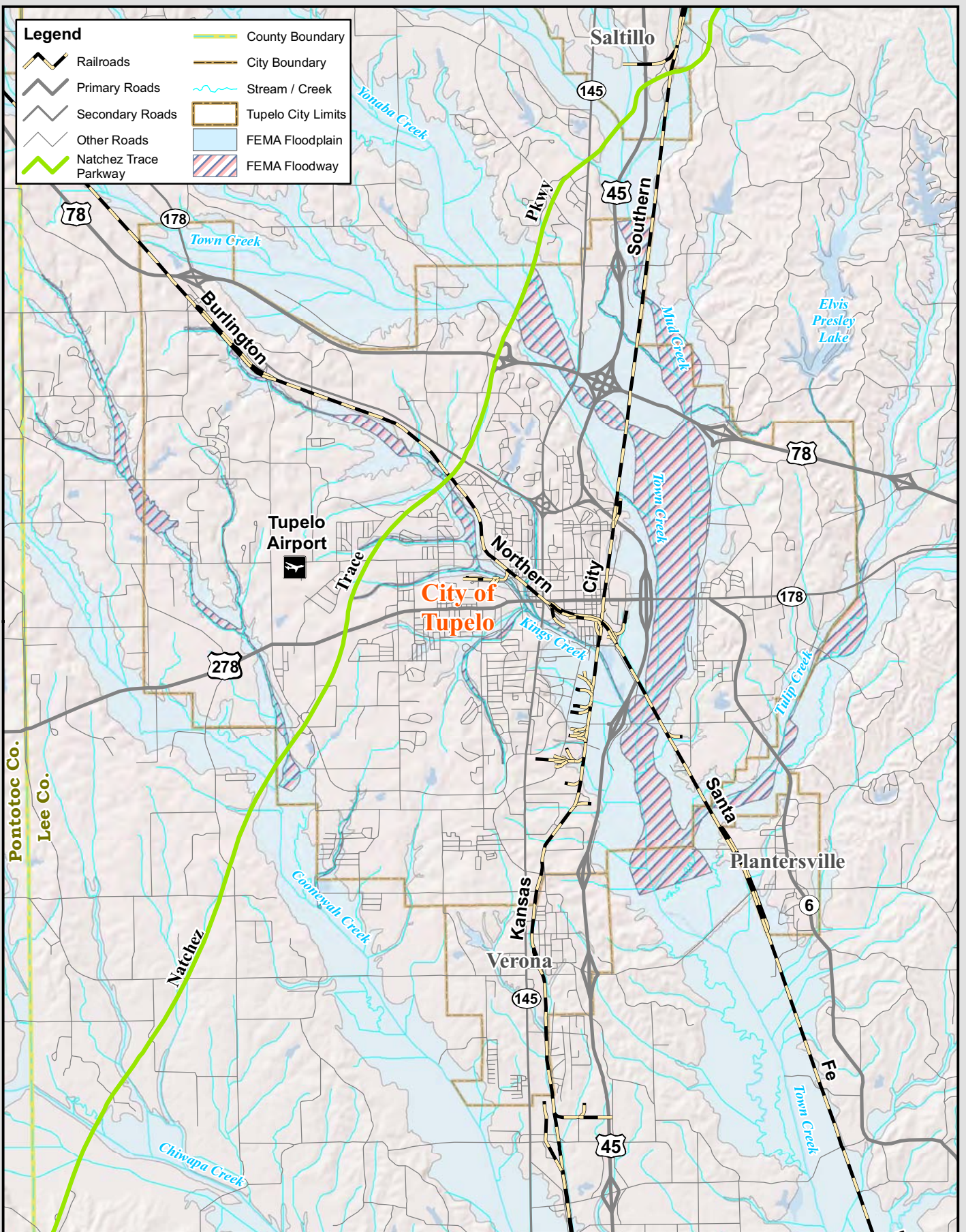
Flooding is the primary environmental concern around the City of Tupelo. Floodplains in the affected environment, shown on **Figure 3-12**, generally follow the wide, mostly flat Blackland Prairie physiographic region. This is due to the fact that these areas lie in valleys at the base of the Tombigbee Hills. Portions of the affected environment lie within the Town Creek, Mud Creek, and Kings Creek floodplains.

In 1968, the U.S. Congress created the National Flood Insurance Program (NFIP) to reduce damage and to provide protection for property owners from potential losses through an insurance mechanism. FEMA produces Flood Insurance Rate Maps (FIRMs), which outline areas subject to flooding. The flood risk information presented on a FIRM is based on historic, meteorological, hydrologic, and hydraulic data, as well as on open-space conditions, flood control structures, and development. A floodplain is any land area susceptible to being inundated by water from any source. Typically, floodplains are delineated by their 100-year flood, which is the one percent probability that flood levels would be equaled or exceeded in a given year on a given piece of land. The 100-year floodplain is accepted by FEMA as the base flood elevations.

Once a flood insurance study is conducted, base flood elevations for the 100-year flood are determined from hydrologic and hydraulic analysis. These zones are typically represented as Zone AE on flood maps. Areas without base flood elevations established within a floodplain are usually represented as Zone A on flood maps. Minimum federal standards limit increases to base flood elevations to one foot, provided that hazardous velocities are not produced. From the flood insurance study, specific portions of the floodplain may be further designated as a regulatory floodway.

A floodway is defined as the channel of the stream plus any adjacent flood plain areas that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights. At any location where an encroachment within the floodway is expected, a no-rise certification must be obtained. This is a hydrologic analysis done by a certified professional engineer certifying that the encroachment would not impact the 100-year floodplain. If a no-rise certification cannot be obtained, then the process to obtain a Letter of Map Revision (LOMR) must be pursued to effectively change the floodway for an area or to remove certain tracts from the floodplain. Map changes would officially alter the FEMA FIRM for flood insurance rate purposes.

Legend	
	Railroads
	Primary Roads
	Secondary Roads
	Other Roads
	Natchez Trace Parkway
	County Boundary
	City Boundary
	Stream / Creek
	Tupelo City Limits
	FEMA Floodplain
	FEMA Floodway



**Tupelo Mississippi Railroad Relocation
Planning & Environmental Study**

**FEMA
Floodplains**

**Figure
3-12**

The Town Creek Master Water Management District (TCMWMD) maintains many of the channels around the City of Tupelo and was one of the first watershed organizations of its kind (formed in 1963). The main purpose of this organization is to manage floodwaters around the City of Tupelo, implement channel improvements, and apply land treatment measures. TCMWMD holds easements ranging from 250 feet to 550 feet in width along all the major channels within the City of Tupelo, and has coordinated with the USACE and the NRCS to implement a floodway channelization plan for the floodways associated with all of the channels in the Town Creek sub-basin. This plan includes either the enlargement of the existing channels or lining the channels with either concrete or rip-rap to facilitate rapid removal of floodwaters. All projects which encroach within these easements would require coordination with and approval from the TCMWMD to avoid any conflicts with the flood control structures and comply with the proposed channelization plan.

3.12 HYDROLOGY AND WATER RESOURCES










3.12.1 Surface Waters

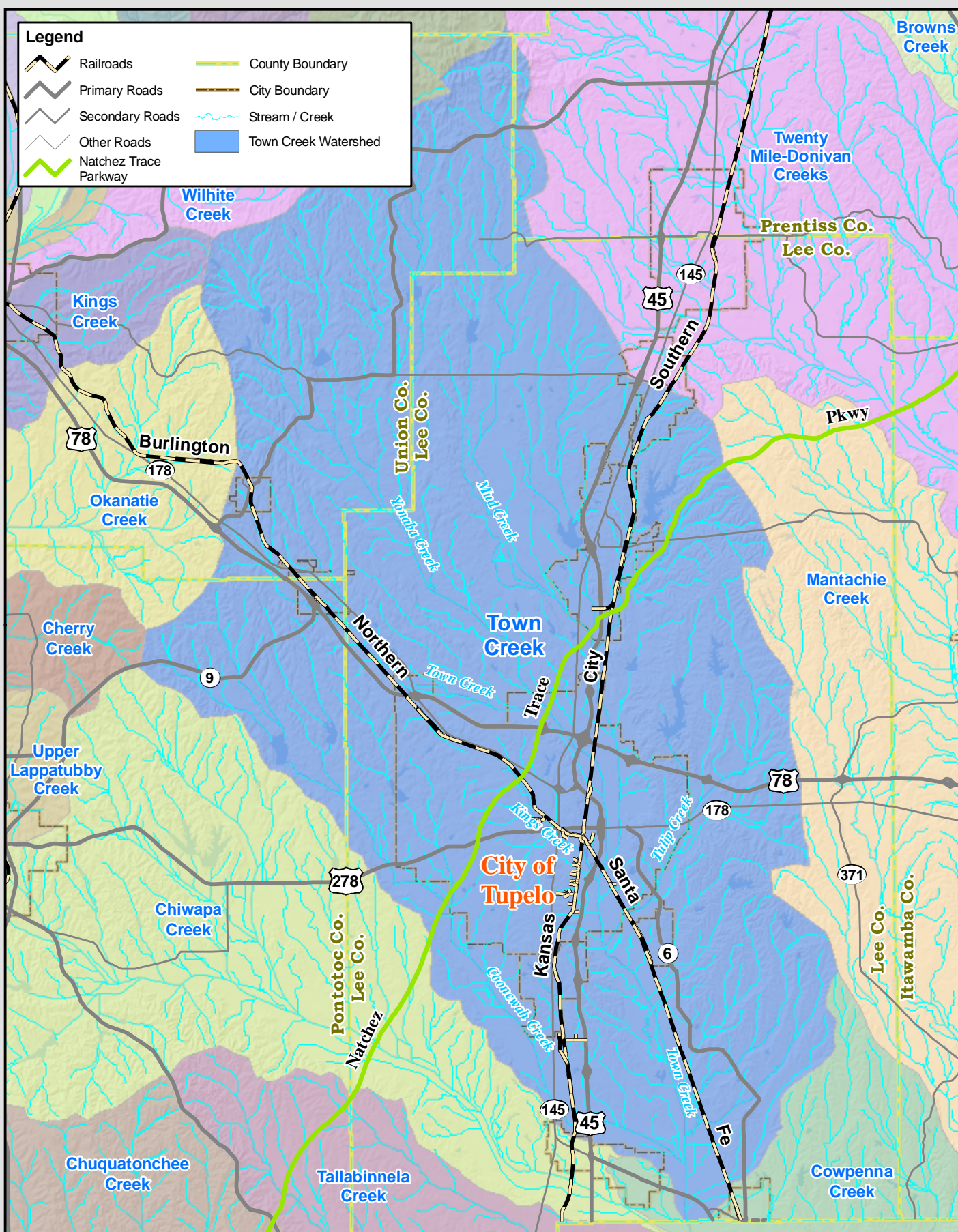
Located in the Tombigbee River Basin, the affected environment is drained by Town Creek, Mud Creek and Kings Creek. The affected environment is located in the Town Creek sub-basin, which covers 682 square miles, shown on **Figure 3-13**. Streams in the area are typically narrow in headwaters and become broad, widely meandering stream valleys downstream. However, around the City of Tupelo, many of the waters have been channelized to aid in stormwater removal. Instead of broad, winding streams, channels are straight, incised water bodies. Upper stream reaches are located in the Southern Coastal Plains-Tombigbee Hills physiographic regions and bottom reaches are located in Blackland Prairie physiographic regions. These waters flow into the Tombigbee River and eventually into the Tennessee-Tombigbee Waterway near Amory, Mississippi. The Tennessee-Tombigbee Waterway is a 234-mile man-made connection between the Tennessee and the Tombigbee Rivers. Waters from the Tombigbee River basin eventually connect to the Mobile River and out to the Gulf of Mexico.

Most of the land within the Town Creek and Mud Creek watersheds is in agricultural use. Streams in these areas receive seasonal increases of sediment loads corresponding with agricultural activities. The Kings Creek watershed receives typical urban runoff chemical contaminants, such as heavy metals, hydrocarbons, and sediment, as well as high sediment loads from construction sites.

Streams in the affected environment are actively incising, primarily due to downstream hydrologic changes resulting from the Tennessee-Tombigbee Waterway. The Tennessee-Tombigbee Waterway has effectively lowered the thalweg elevation of all water bodies flowing into it. Upstream channels are adjusting to this lower elevation and are incising to meet the new downstream gradient. Due to this natural channel process, streams are receiving large sediment loads. This increases the need for channelization and bank stabilizing activities.

Legend

	Railroads		County Boundary
	Primary Roads		City Boundary
	Secondary Roads		Stream / Creek
	Other Roads		Town Creek Watershed
	Natchez Trace Parkway		



		<p>Tupelo Mississippi Railroad Relocation Planning & Environmental Study</p>	<p>Sub-basins / Watersheds</p> <p>Figure 3-13</p>
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3.12.2 Designated Use

Designated uses are prescribed by MSDEQ to determine activities that healthy stream segments should support, including aquatic life, secondary contact, recreation, and fish consumption. Town Creek, Mud Creek and Kings Creek each have an aquatic life designated use. The aquatic life designated use means that these stream segments should meet the basic needs of aquatic organisms and support healthy and diverse in-stream communities.

Streams unable to satisfy the requirements of their designated use are placed on Mississippi's 303(d) list, along with the possible causes of impairment, in compliance with Section 303 of the CWA. Once on the list, states are required to develop a plan to reduce the cause of impairment in order to restore the stream to healthy conditions.

Part of this restoration plan is the development of Total Maximum Daily Loads (TMDL), which is the maximum contaminant concentration in a water body that allows it to support its designated use. Town Creek, Mud Creek, and Kings Creek are all on Mississippi's 303(d) list for their inability to satisfy the requirements for aquatic life designated use.

3.12.3 Water Resources Management

The TCMWMD maintains 21 flood control structures constructed in the headwater tributaries of Town Creek, as well as other floodwater retarding structures. Many creeks within the City of Tupelo have been channelized to aid in stormwater removal. The TCMWMD aids in debris removal around culverts and bridges and holds easements, ranging from 250 feet to 550 feet, around all major channels within the Town Creek sub-basin.

All major perennial channels around the City of Tupelo have adequate riparian buffers due to management activities of the TCMWMD. This organization holds conservation easements and maintains riparian buffers of 75 to 250 feet along each side of the main channels around the City of Tupelo. Riparian buffers are important components for functioning streams. They provide stream bank stabilization, contaminant filtration, flood surge dampening, habitat for both in-stream and terrestrial organisms and provide important shading functions to the stream.

3.12.4 Wild and Scenic Rivers

As part of the Wild and Scenic Rivers Act of 1968, certain rivers and their immediate environments are designated Wild and Scenic and carry special protection. Mississippi has only one Wild and Scenic River which is located in the southern portion of the state. There are no designated Wild and Scenic rivers within the affected environment.

The State of Mississippi also oversees a Statewide Scenic Stream Stewardship Program (SSSP). This is a non-regulatory program to encourage private conservation efforts on exceptional streams in Mississippi. For a stream to be eligible for the



program, it must not have been channelized within the previous five years and must be designated a “public water.” In northeast Mississippi, there are several streams either enrolled in or nominated for the SSSP. However, none of them are located within the affected environment.

3.12.5 Groundwater

The affected environment lies on the boundary of the Southeastern Coastal Plain Aquifer and a Confining Unit, shown on **Figure 3-14**. The Confining Unit is an area composed of rock or sediment with low permeability so that water hardly moves through the unit. The Confining Unit generally follows the Blackland Prairie physiographic region.

The Southeastern Coastal Plain Aquifer is made up of unconsolidated sands and is a wedge of sediments which becomes thicker as it approaches the coast. The aquifer in this portion of Mississippi is typically very deep. U.S. Geological Survey (USGS) measurements at three wells near the BNSF main line indicate the aquifer is a minimum of 230 feet below the surface of the City of Tupelo.

The City of Tupelo acquires its drinking water from the Tombigbee River, 18 miles northeast of Tupelo.










3.13 FEDERALLY FUNDED AND PROTECTED PUBLIC FACILITIES

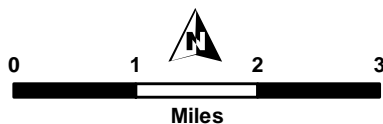
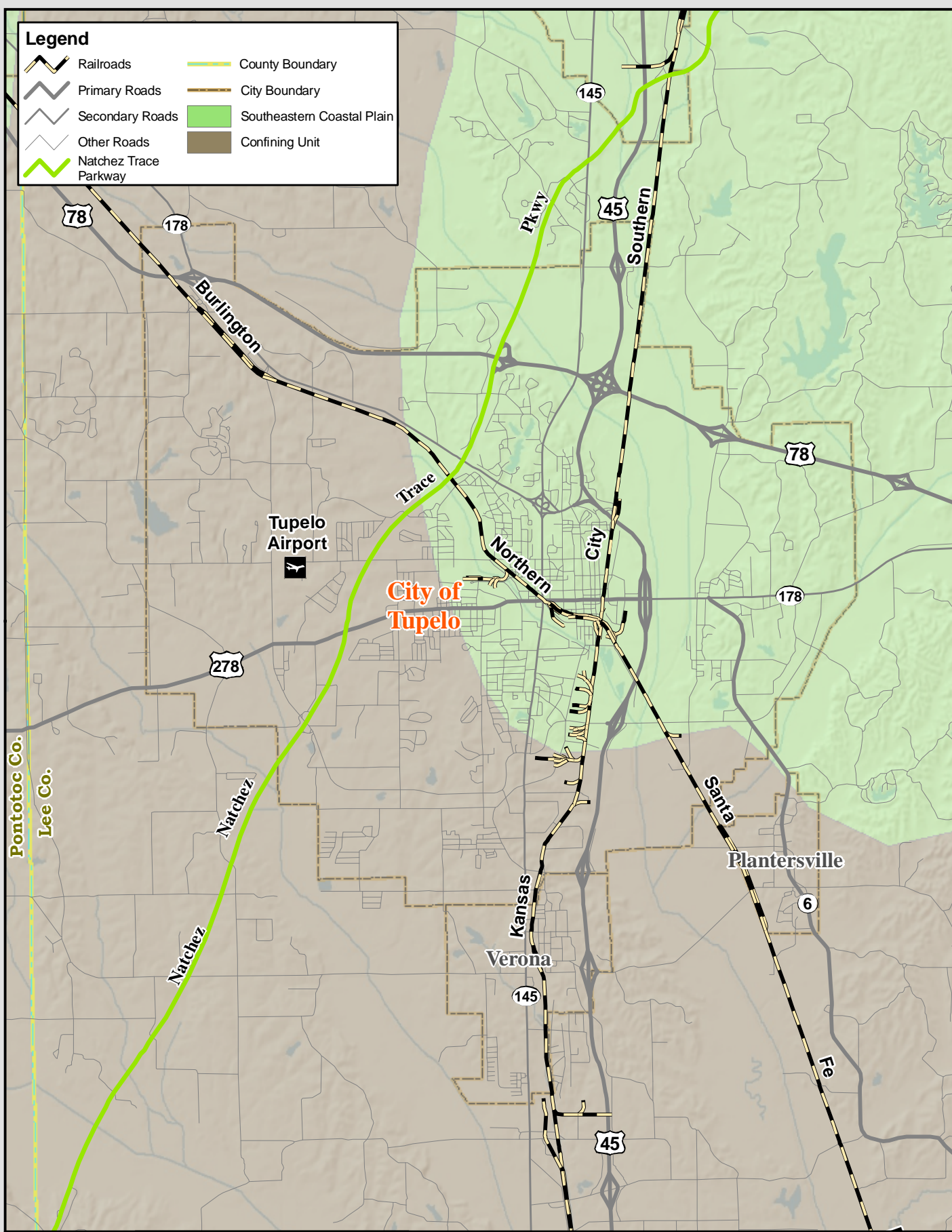
3.13.1 Section 4(f) of the Department of Transportation Act

Section 4(f) of the Department of Transportation Act of 1966 (49 USC 303(c)) allows for publicly owned parks and recreation areas, wildlife or waterfowl refuges, or significant historic sites to be “used” for transportation purposes only if there is no feasible and prudent alternative to the use of the land, and the action includes all possible planning to minimize harm resulting from such use. Use can be defined in three ways: Actual Use, Temporary Occupancy, or Constructive Use (23 CFR 774). Actual Use constitutes permanent incorporation of the resource into the project, such as land acquisition or demolition of a resource. Temporary Occupancy would be the extended intrusion into the property during construction, where construction would physically alter the land, or where full restoration of the resource could not be possible after construction. A Constructive Use determination could apply if a resource would experience ancillary impacts, despite the lack of a physical intrusion into the resource. Increased noise, increased vibration, restriction of access, ecological intrusion, or visual impairment are all examples of Constructive Use.

If the lands or sites are determined to be impacted by Actual Use, Temporary Occupancy, or Constructive Use, a Section 4(f) evaluation would be prepared to assess the impacts to the affected lands. The Section 4(f) evaluation would be included in the EIS and would require MDOT and FRA approval in the final EIS.

Legend

	Railroads		County Boundary
	Primary Roads		City Boundary
	Secondary Roads		Southeastern Coastal Plain
	Other Roads		Confining Unit
	Natchez Trace Parkway		



**Tupelo Mississippi Railroad Relocation
Planning & Environmental Study**

Aquifer

Figure
3-14



The inventory of land uses included a review of public parks, recreation areas, wildlife and waterfowl refuges of national, state, or local significance, or land of an historic site of national, state, or local significance.

There are no wildlife or waterfowl refuges within the affected environment. Land of an historic site of national, state, or local significance and public parks and recreation facilities within the affected environment subject to Section 4(f) protection include:

- Pvt. John Allen National Fish Hatchery
- Mill Village Historic District
- South Church Street Historic District
- Downtown Historic District
- Carnation Condensary
- Hamp Bryson House
- North Neighborhood Historic District
- Gravlee Historic District
- Joyner Historic District (proposed)
- Oren Dunn City Museum
- Tupelo National Battlefield
- Natchez Trace Parkway
- Rob Leake City Park
- Burt Park Liberty Gardens
- Veterans Park
- Old Mill Town Park
- Elvis Presley Birthplace and Museum
- Gum Tree Park
- Eastwood Softball Complex
- City Hall Park
- Ballard Park

3.13.2 Section 6(f)(3) of the Land and Water Conservation Fund Act

Section 6(f)(3) of the Land and Water Conservation Fund Act (LWCFA) requires that all land purchased or improved with LWCFA funds are to remain forever available for public outdoor recreation use or replaced by lands of equal market value and recreational usefulness, and any conversion of property must be approved by the Secretary of the U.S. Department of the Interior.

This "anti-conversion" requirement applies to all parks and other sites that have been the subject of LWCFA grants of any type, whether for acquisition of parkland, development or rehabilitation of facilities. In many cases, even a relatively small LWCFA grant (e.g., for development of a picnic shelter) in a park of hundreds, or even thousands, of acres provides anti-conversion protection to the entire park site.

The Natchez Trace Parkway, Oren Dunn City Museum, and Ballard Park and Sportsplex have been LWCFA grant recipients within the City of Tupelo and thus fall under Section 6(f)(3) protection.

3.13.3 National Trails System Act

The National Trails System Act promotes the preservation, enjoyment, and appreciation of the open-air, outdoor areas and historic resources, with provisions to include public access. Trails should be established primarily near urban areas and secondarily within scenic areas and along historic travel routes which are often remotely located.



The National Trails System Act identified the Natchez Trace National Scenic Trail as one of the initial 14 routes nationwide thought to have potential as a national scenic trail. The six-mile foot trail parallels the Natchez Trace Parkway from Jackson Street to the Natchez Trace Parkway Headquarters and Visitor Center.

3.14 WILDLIFE

3.14.1 Vegetative Communities

The affected environment is comprised of the confluence of the Blackland Prairie ecoregion and the Southern Coastal Plain, shown on **Figure 3-10**. The proposed project corridor lies exclusively within the Blackland Prairie ecoregion. The Blackland Prairie is a crescent-shaped region extending from northeast Mississippi, across central Alabama, and into western Georgia. The original vegetation of Blackland Prairie is not well known; however, it was probably prairie grasses scattered with wildflowers. This area was once believed to be connected to the Great Plains region of the United States and controlled by regular fire cycles. The Blackland Prairie area is considered a critically endangered ecosystem in the nation and has been identified by the USFWS partners group as one of their focus areas. In the 1800's, much of the prairie land was converted into agriculture production due to its relatively flat topography and fertile soils. Excessive grazing allowed expansion of eastern red cedar and other noxious species. At this time, there are no pristine prairie environments remaining in the Blackland Prairie around the City of Tupelo. Although the project is located in the Blackland Prairie, it is surrounded by rolling Tombigbee Hills which is part of the Southern Coastal Plain.

Most native prairie vegetation, such as blackbelt oak-cedar forests, has been replaced with row crop and grazing agriculture activities. It is estimated that less than one percent of the Blackland Prairie's open prairie habitat remain intact nationwide. Remaining prairie remnants are also threatened by development, erosion, incursion of eastern red cedar, waste disposal, suppression of fire, and other human activities. In recent years, areas in several of the higher quality prairies have been disturbed by recreational driving and planting green-fields for deer hunting.

The region supports both deciduous hardwoods and conifers in undeveloped areas. Red oak, white oak, sweetgum, blackgum, loblolly pine, and shortleaf pine are the dominant over story species. Mixed hardwoods dominate floodplains and forests of eastern red cedar and sugarberry dominate alkaline hills and side slopes. Eastern red cedar, dogwood, and osage orange are the major midstory species. Japanese honeysuckle, greenbrier, little bluestem, native lespedzas, plumegrass, low panicums, sedges and rushes are the dominate understory species. The affected environment generally contains either urban or agricultural areas. Few pristine deciduous or coniferous forests are found within the affected environment.



3.14.2 Terrestrial Habitat

Because the primary land use for the affected environment is either agriculture or urban, most wildlife species expected in the affected environment are generalists and are able to survive in a wide range of habitats. Organisms found in open areas, including agriculture, are bobwhite quail, cottontail rabbit, red fox, mourning dove, and species of songbirds. Squirrels, white tail deer, wild turkey, woodcock, raccoon, ducks, geese, rails, and shore birds can be found in, or near, the affected environment. No environmentally sensitive habitat or species is found within the affected environment.

3.14.3 Aquatic Habitat

Water bodies support numerous different forms of aquatic organisms including fish, macroinvertebrates, and phytoplankton. These organisms often require specific habitat requirements to thrive. Substrate type is typically a guiding factor in determining what communities can survive in a stream.

Large sediment loads are the leading cause of stream degradation of aquatic communities. Small interstitial spaces providing opportunities for retreat for aquatic insects can become saturated with sediment and many aquatic eggs become suffocated by high sediment loads. Fish gills can become clogged and sight-hunting fish species can have reduced visibility, and thus are unable to locate prey, with increased sedimentation. Primary producers, which obtain energy from the sun and are the base for all communities, are unable to photosynthesize due to the fact that light is unable to filter through murky waters.

Organisms found in Kings Creek, Mud Creek, and Town Creek area are typical organisms able to survive in a range of environmental conditions and are capable of living in poor water quality due to high sediment loads and stream channelization activities. Common fish species found in these creeks include bass, bluegill, and channel catfish.

3.14.4 Threatened and Endangered Species

3.14.4.1 Federally Listed Species

In compliance with Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), the USFWS was consulted in regard to any Threatened or Endangered species within the affected environment. A USFWS record search revealed the presence of one federally threatened species in Lee County.

Price's potato bean (*Apios priceana*)

This species was listed by USFWS as Threatened in 1990 due to the small number of populations and threats to its habitat. At the time of listing, there were 25 known populations of the species in four states.



Price's potato bean (*Apios priceana*) is a yellow-green perennial vine in the pea family (*Fabaceae*). It was originally found by Sadie Price in Bowling Green, Kentucky in 1896. The compound leaves have five to seven (dark green above, lighter below) leaflets, growing from a stout, thick tuber. Twining vines are round in cross section, somewhat twisted and slightly ridged. Flowers are white and pink-purple-maroon, large pea-type flowers. Flowering in August with large pink fragrant blooms, the Price's potato bean can be distinguished from other legumes by its single large tuber.

Occurring in mesic (moderately moist) forests, it is often found along streams or tree fall gaps in open canopy habitats. The species is found in upland habitat near creeks and stream banks. Unlike many listed species, the Price's potato bean requires some openings in the tree canopy to allow sunlight. Excessive shading from canopy trees results in reduced growth and reproduction. The species can be found along roadsides and utility rights-of-way.

No critical habitat for the Price's potato bean has been established by the USFWS. The potato bean does not flower every year. Due to the fact that a single vine grows from a large tuber, it is easy to overlook this species when it is not flowering.

The population declines are primarily due to the fact that the plant produces very few seeds, resulting in a low level of sexual reproduction. Clear cutting logging practices can eliminate populations. Also, most populations are located on private lands where management for this species may not be a high priority. Trampling of species by cattle can cause severe damage.

The largest known population of Price's potato bean is located in Lee County, in the nearby Coonewah Creek watershed. The Nature Conservancy owns this five-acre tract of land with 1,300 to 1,500 individuals, the largest known population of Price's potato bean in the world. The preserve is located near the intersection of Coonewah Creek and MS 6 southwest of Tupelo. Because of this large concentration of individuals there is potential to find other populations in nearby watersheds, such as Town Creek or Mud Creek.

3.14.4.2 Critical Habitats

A critical habitat is defined in the Endangered Species Act as a habitat given special protection for the benefit of a listed species. No critical habitats for any species were recorded within the affected environment.

3.14.4.3 State Listed Species

Record searches of the Mississippi Department of Natural History did not reveal the presence of any state listed species in the affected environment.



3.14.5 Conservation Easements

Conservation easements are legal agreements entered into by a property owner and a qualified conservation organization such as a land trust or a government entity. The use of conservation easements is widely employed throughout the State of Mississippi to protect and preserve wildlife, wetlands, and agricultural land. Most easements involve permanent restrictions on the use of land whereas some are term easements. The TCMWMD holds conservation easements around many of the channels throughout the Tupelo area.

3.15 HAZARDOUS MATERIALS

3.15.1 Historical Information

Standard historical sources reviewed in this investigation were USGS (7.5-minute) Topographic Maps made available by the NRCS office in Tupelo. Aerial photographs reviewed were dated for the years 1958, 1980, 1985, and 1992. In addition, Sanborn Fire Insurance Maps were also reviewed for the years 1924, 1949, and 1963 for a more detailed view of the more industrial section of the affected environment.

Aerial photographs indicate that this entire section of the existing BNSF main line was developed during these years for light to heavy industrial use. US 45 had not been constructed in 1958. Although detail is poor on the aerials, the increasing level of development is readily apparent through the years.

The review of the aerial photographs and Sanborn maps shows significant change occurred in the more industrial area of the corridor from 1924 through 1992. However, the path of the railroad remained constant, and growth of the area and change in industry from more industrial to textile and light commercial does not suggest the potential for environmental impairment along the existing railroad.

3.15.2 Federal and State Records Storing Data on Industrial Waste

All database record reviews were obtained from Environmental Data Resources, Inc. (EDR), which incorporates databases from the EPA and the MSDEQ.

The EDR database provides extensive information regarding facilities which use, generate, or store hazardous materials. The EDR database includes information from the Resource Conservation and Recovery Act (RCRA), Mines Master Index, Sara Title III Toxic Chemical Release Inventory System (TRIS), Emergency Planning and Community Right-to-Know, Federal Insecticide, Fungicide and Rodenticide Act, and the Toxic Substances Control Act (FTTS and HIST FTTS). In addition, sites which utilize underground storage tanks (USTs) or above-ground storage tanks (ASTs) are listed. Facilities which have environmental permits such as National Pollutant Discharge Elimination System (NPDES) program, the Title V Air program or Solid and Hazardous Waste program permits are included. A separate EPA database called the Facility Index System (FINDS) provides additional data on sites included in the



above programs. According to the search performed of these databases, the following sites in the overall search area were reported:

- RCRA Small Quantity Generators - 7
- RCRA Non-Generators - 14
- FTTS - 2
- HIST FTTS - 2
- FINDS - 76
- Landfill - 1
- SWRCY (Solid Waste Recycler) - 1
- Underground Storage Tanks (UST) - 113
- Above Ground Storage Tanks (AST) - 2
- Permits - 18

Databases capturing information on spills or clean-up of releases and the number of sites reported by EDR for the overall search area include the following:

- Emergency Response Notification System (ERNS) -8
- Hazardous Materials Incident Report System (HMIRS) - 1
- Department of Transportation Office of Pipeline Safety (DOT-OPS) - 1
- State Voluntary Clean-Up Program (VEP) - 1
- State Hazardous Waste Sites (SHWS) - 7
- Leaking Underground Storage Tanks (LUSTS) - 28

Based on the database records, there have been no railroad-generated contamination spills in the Tupelo area. Releases of hazards substances reported by ERNS included a small release of gasoline (approximately 10 gallons) from a saddle tank on a large truck parked at a Kroger Grocery store (241 South Park, west of the Crosstown intersection) and a release of floor scrubbing waste water entering a storm drain from the Cooper Tire Rubber Company (1804 Green Street, south of Eason Boulevard along the KCS rail line). The HMIRS also has listed the release at the Kroger location. EDR Site specific reports indicate that actions were taken to remedy the releases.

SHWS listed sites include the following:

- Day Brite Lighting/Thomas Industries
- Tupelo Recycling/Henry Oil
- Tupelo Fairgrounds-Long Laundry

The Day Brite Lighting site received a Federal No Further Action letter in November 1995. The site is located approximately 2.5 miles south of the intersection of the BNSF and the KCS railroads. Only one SHWS site, Tupelo Recycling/Henry oil was noted adjacent to the railroad. The Tupelo Recycling/Henry Oil site was reported by



EDR to have received a State No Further Action letter in May 1997. Because this site is immediately adjacent to the railroad, a file review was performed at the MSDEQ. Soils and groundwater at the site were documented to be contaminated with petroleum products. The May 1997 letter issued by MSDEQ required that additional groundwater delineation be performed onsite, that contaminated soils be removed, and that oily wastewater in a sump be removed. These activities were apparently performed by the facility to the satisfaction of the MSDEQ. The Tupelo Fairgrounds–Long Laundry, which is located in an area to the northeast of the existing BNSF main line, is being remediated by the Tupelo Redevelopment Authority which has worked to develop the surrounding area. Groundwater has been contaminated at the site by the dry cleaning solvent tetrachloroethene and its degradation products. Contamination appears to be localized and is being addressed under the MSDEQ Brownfields program.

The majority of the LUST sites reported were noted to be closed. Sites with an open status include the following:

- Mid Town BP at 220 North Gloster Street
- Savings Station at 447 East Main Street
- Cockrell Banana Company 405 Elizabeth Street

The Mid Town BP is undergoing clean-up under the State Trust Fund for remediation of leaking underground storage sites, and the USTs have been removed. The Savings Station and the Cockrell Banana sites are located near the intersection of Elizabeth Road and East Main Street, away from the BNSF main line.

EDR provides a list of “Orphan sites” that are included on various databases, but which have insufficient address information to provide locations. There are numerous Orphan sites listed for the overall affected environment. The majority of the Orphan sites are listed under a FINDS, RCRA, UST, or Permits database, and none was identified immediately adjacent to the railroad corridor during the site reconnaissance.

3.16 AESTHETICS AND VISUAL RESOURCES

The majority of the affected environment is flat and used for agriculture and urban residential areas. Even in the industrial areas adjacent to the existing BNSF and KCS rail corridors, there are few distinguishing visual characteristics in the landscape and few structures over 35 feet tall. The most prominent natural features are the streams and remaining wooded areas adjacent to them. Other visual features include an historic Tennessee Valley Authority (TVA) sign at the Crosstown intersection, the BancorpSouth Arena, and the 1,000-foot viewshed surrounding the Natchez Trace Parkway.

The existing BNSF and KCS railroad corridors serve as both a visual resource and a visual obstruction. The rail beds provide open space and the setting for train-watching enthusiasts, which can be viewed as providing a visual resource. However, the rail beds also provide the

setting for negative visual impacts resulting from passing and standing trains. The trains on the existing BNSF and KCS rail lines provide temporary and long-term viewshed impacts to cultural resources. The trains which pass through Tupelo or which are engaged in interchange operations can be considered a temporary viewshed impact. The rail cars which occupy the interchange yard storage tracks between Gloster Street and Church Street on the BNSF main line and between Eason Boulevard and Elizabeth Street on the KCS rail line can sit unmoving for several days. Even though individual cars may not spend a significant number of days in either of these yards, the cars are replaced often enough such that they would represent an almost permanent presence. This can be considered a long-term viewshed impact as rail cars are often rusty and covered with graffiti.

3.17 TRANSPORTATION AND UTILITIES










3.17.1 Highways

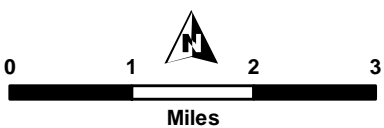
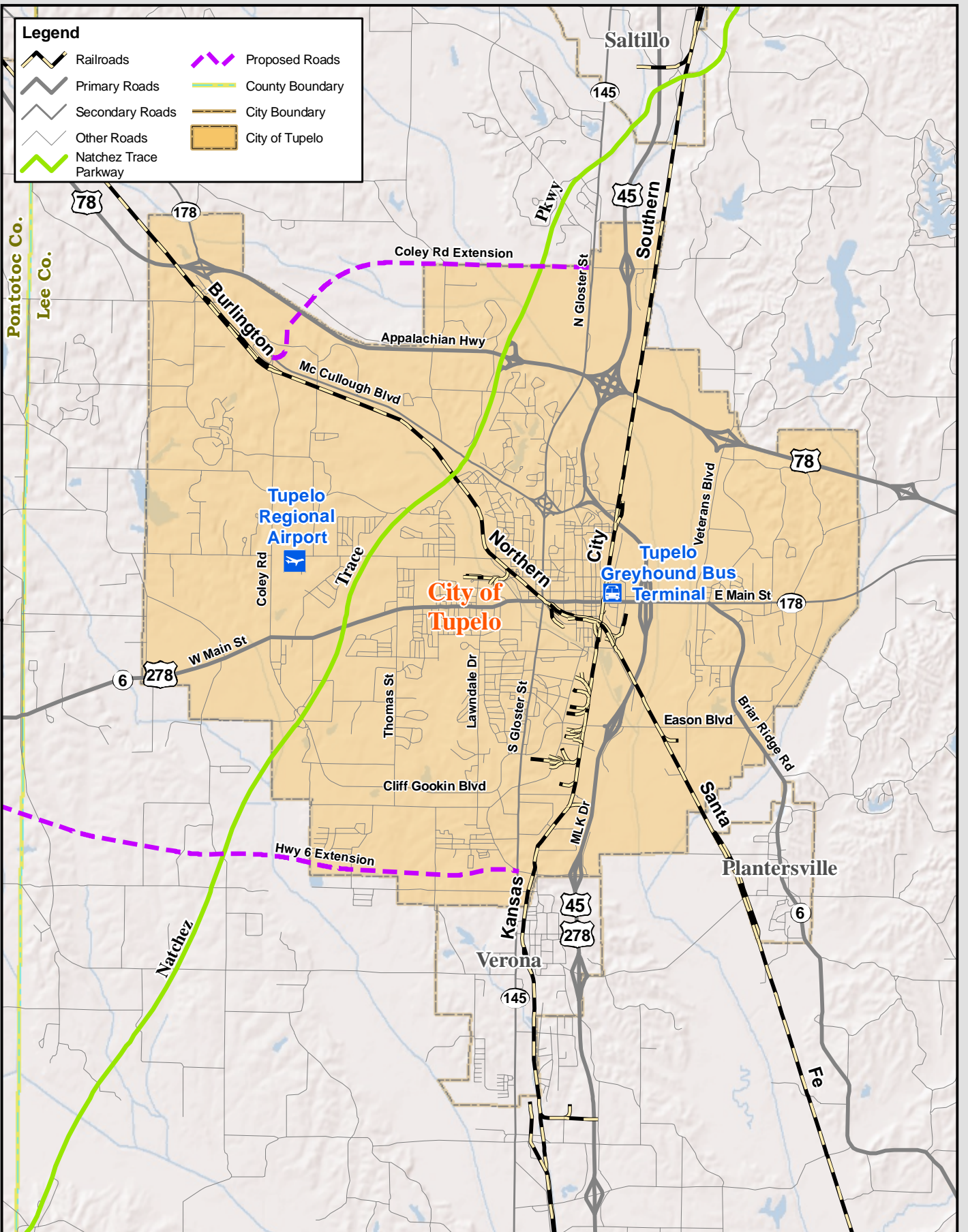
The transportation network within the City of Tupelo consists of a combination of local streets, state highways, U.S. highways, and a future Interstate highway corridor, shown on **Figure 3-15**. In addition, two corridors of the Appalachian Highway System run through the City of Tupelo.

- US 78 (future I-22) runs east to west as a four-lane, divided, limited-access highway across the northern portion of the Tupelo city limits. This highway is also part of Corridor X of the Appalachian Highway System and provides freeway access from Tupelo to Memphis, Tennessee and Birmingham, Alabama.
- US 45 (Martin Luther King Jr. Drive) runs north to south as a four-lane, divided, limited-access highway through the center of the Tupelo city limits. The highway is shared by MS 178 from McCullough Boulevard to Main Street and US 278 from Main Street to Shannon, Mississippi. US 45 provides a north-south freeway bypass around downtown Tupelo from Shannon to Saltillo.
- US 278 runs east to west as various road types, sharing MS 6 and US 45 through the City of Tupelo. US 278 is also part of Corridor V of the Appalachian Highway System.

MS 6 is a principal east to west road through the City of Tupelo. It shares Main Street from the west and through the downtown area and then turns south to Plantersville as Briar Ridge Road. However, MS 6 is being realigned to be constructed as a new four-lane, divided highway to run to the south of the City of Tupelo. MS 6 provides access from Tupelo to Pontotoc and serves as a local highway to the communities south of Tupelo.

Legend

-  Railroads
-  Primary Roads
-  Secondary Roads
-  Other Roads
-  Natchez Trace Parkway
-  Proposed Roads
-  County Boundary
-  City Boundary
-  City of Tupelo



Tupelo Mississippi Railroad Relocation Planning & Environmental Study

Transportation Network

Figure 3-15



- MS 145 (Gloster Street) is a principal north to south road through the City of Tupelo. It provides local access from Tupelo to Shannon, Verona, and Saltillo.
- MS 178 is a principal east to west road through the City of Tupelo. It runs as McCullough Boulevard from the northwest corner of the City to US 45, then shares US 45 to Main Street, and then runs east as Main Street towards Mooreville. MS 178 provides local access from Tupelo to Sherman and Blue Springs.
- Natchez Trace Parkway, which is maintained by the U.S. National Park Service, is a national scenic, two-lane, limited-access roadway which runs north to south through the City of Tupelo. While the Natchez Trace Parkway is not a primary highway and does not allow trucks, this road does connect individual passenger cars from Tupelo with Jackson, Mississippi and Nashville, Tennessee.

3.17.2 Airports

Tupelo provides regional air service at the Tupelo Regional Airport, served by Northwest Airlin/Mesaba (three commercial flights per day). Located in the western portion of Tupelo, shown on **Figure 3-15**, the airport serves 13 Mississippi counties and accounts for 202 jobs with an annual payroll of \$4.1 million. The airport's total economic impact is almost \$14 million. Gross revenues for associated rental cars companies alone approached \$1 million in 1999. The airport operations also host Army aviation and Mississippi National Guard facilities and operations.

3.17.3 Public Transportation

Greyhound operates long-distance passenger bus service with a station in Tupelo, shown on **Figure 3-15**. Tupelo does not have local or regional bus service or passenger rail service.

3.17.4 Pedestrian and Bicycle Facilities

As part of the U.S. National Park Service, the Natchez Trace Parkway promotes bicycle use along its entire 444-mile route, including within the City of Tupelo. However, cyclists are discouraged from using the Natchez Trace Parkway during peak traffic times through the City of Tupelo, as the Natchez Trace Parkway does not provide any dedicated bicycle facilities, such as bicycle lanes, paved shoulders, or sidewalks. Some of the streets in downtown Tupelo have sidewalks, but there are no designated bicycle facilities within the City of Tupelo. Pedestrian trails within the City of Tupelo are limited to the city parks, such as Burt Park Liberty Gardens and Ballard Park, and the Natchez Trace National Scenic Trail.

The existing BNSF main line through the City of Tupelo has no pedestrian or sidewalk facilities which directly cross the railroad within the right-of-way. However, sidewalk segments along the west side of both Park Street and Church Street terminate on each side of the BNSF right-of-way, making a tacit or implied connection. In addition, sidewalk along both sides of Spring Street terminates on the



north side of the existing BNSF right-of-way with no sidewalk facilities south of the railroad. Pedestrians entering the BNSF or KCS right-of-way without consent are considered trespassing.

3.17.5 Utilities

The City of Tupelo includes many utilities, both subsurface and above-ground. The City of Tupelo provides potable water, sewer, and electricity to customers within the city limits. The electric service, however, is actually generated by the TVA. There are also five major TVA transmission lines which run through the entire affected environment. Mississippi Valley Gas Company (ATMOS Energy) provides natural gas in Tupelo, with a pipeline extending southeast from Tupelo. AT&T is the major provider of telephone service in Tupelo. Comcast provides television cable service in and around the Tupelo city limits.